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SOIL SURVEY
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United States Department of Agriculture

Soil Conservation Service

P. O. Box 2440
Casper, WY 82602
September 23, 1982

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Mr. Maxwell T. Lieurance
State Director
Bureau of Land Management
P. O. Box 1828
Cheyenne, WY 82001

Dear Mr. Lieurance:

I am sending you this soil survey working paper for Natrona County. This document incorporates the efforts of the Casper soil survey party in Natrona County during the 1981 field season.

It is the intent of the soil survey party to compile a similar report for each season's field work. If you have any questions or comments about this report, please contact George Davis at 261-5405, Larry Malnor at 261-5439, or George Hartman at 261-5208 (FTS 328-5208).

Sincerely,

George Hartman

George W. Hartman
State Soil Scientist

Attachment

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Soil Scientists

July, 1982

SOIL SURVEY

NATRONA COUNTY, WYOMING

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Soil Scientists

WORKING PAPER-SOIL SURVEY
QUADRANGLES: Sioux Pass, Badwater, Badwater NE, Badwater SE,
Grave Spring, Deadman Butte, First Water Draw,
Three Buttes, Notches Dome, Hells Half Acre,
Powder River.
NATRONA COUNTY, WYOMING

BY THE CASPER SOIL SURVEY OFFICE
SOIL CONSERVATION SERVICE

LAWRENCE K. MALNOR, SURVEY PARTY LEADER.
SUSAN E. ARNOLD, ANN M. PULLEN, JAMES W. WESTERMAN,
SOIL SCIENTISTS.

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE;
UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF LAND MANAGEMENT; IN
COOPERATION WITH THE UNIVERSITY OF WYOMING AGRICULTURAL EXPERIMENT
STATION AND EXTENSION SERVICE.

ALL TEXT AND MAPS ARE BASED ON PRELIMINARY INFORMATION AND ARE
SUBJECT TO CHANGE.

JULY 1982

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To whom it may concern:

This soil survey is an interim publication of the Natrona county soil survey, a joint effort of the United States Departments of Agriculture and Interior, state agencies including the Agricultural Experiment Stateion, and local agencies.

Field work for this survey was performed in the 1981 field season, and covered only that portion of Natrona county shown on the location map. Soil names and descriptions are tentative subject to final approval upon completion of the entire county. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1981. This survey was made cooperatively by the Soil Conservation Service, the Bureau of Land Management, and the Wyoming Agricultural Experiment Station. It is part of the technical assistance furnished to the Casper-Alcova Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at the larger scale.

JULY 1982

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SOIL SURVEY INTERPRETATIONS

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United States Department of Agriculture

Soil Conservation Service

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General Nature of the 1981 Natrona County Soil Survey Area

The northwest part of Natrona County was soil surveyed in the 1981 field season. For the purpose of this discussion, the survey area is divided into three areas: Bighorn Mountains, foothills, and the Casper arch. (See figure) The areas have wide variations in geologic formations, topography, elevation, precipitation, and soils.

The Bighorn Mountains occupy the northwest most part of the county and mark the south end of the middle Rocky Mountains. The core of the mountains consists mostly of precambrian igneous and metamorphic rocks (e.g., granite, basalt, quartzite, and gneiss), with scattered exposures of cambrian rocks (e.g., quartzite and sandstone). The Madison limestone and the Tensleep sandstone are exposed along the east side of this area.

The topography is mountainous, with relatively high peaks, broad valleys, and deep canyons. Elevation is 7500 to 9000 feet. The mean annual precipitation is 15 to 19 inches and the growing season is less than 80 days.

The soils have a cryic temperature regime. Typically, shallow soils are on ridges and steep mountain sides. Deep soils with thick, dark surfaces are in the valleys. Deep, poorly drained soils are in drainageways. Most are noncalcareous.

The foothills occupy areas directly west, south, and east of the Bighorn Mountains. The southern and western foothills differ from the eastern foothills in geologic formations and topography. South and west of the mountains several geologic formations are exposed. They are the Madison limestone, the Tensleep sandstone, the Wagonbed Formation (mudstone, sandstone, and conglomerate), and alluvial deposits of unconsolidated sand, silt, and gravel. Moderately steep, dissected uplifts and high dissected terraces are common in this area. East of the mountains several other formations are exposed. Starting at the western edge and moving eastward, they are the Goose Egg dolomite and limestone, the Chugwater sandstone, the Sundance sandstone and shale, the Cloverly and Morrison sandstone, claystone, and conglomerate; the Mowry and Thermopolis shales, the Frontier sandstone, and the Cody shale. These formations are tilted sedimentary beds, with undulating to rolling relief on the dipslopes and moderately steep to steep escarpments.

Elevation of the foothills is 6500 to 7500. The mean annual precipitation is 10 to 14 inches and the growing season is 80 to 100 days.

The soils have a frigid temperature regime. Typically, shallow and moderately deep soils with thin, dark surfaces are on dipslopes and escarpments. Deep soils are on terraces and alluvial fans. The soils are typically calcareous in some parts, except those over the Mowry and Thermopolis shales.

The Casper arch, or the northern plains, is a broad, gentle uplift. It contacts the southeast edge of the foothills and the east edge of the Wind River Basin, extending to the eastern boundary of the county. The Meeteetse shale and sandstone and the Lewis shale are exposed along the west margin of the Casper arch. Directly east is the Mesaverde sandstone and shale which contacts the Cody shale. The Cody shale extends eastward with some intermingled windblown deposits of unconsolidated sand. Along the northwestern edge of the

Casper arch, near Nothches Dome, the Mowry and Thermopolis shales are exposed.

There is a wide variation in topography. Dissected shale uplands, alluvial plains, dunes, and terraces are all common. Sedimentary uplifts with exposed rock are also present.

Elevation ranges from 5600 to 6800 feet. Throughout most of this area the mean annual precipitation is 10 to 14 inches. South of Notches Dome a narrow basin along Cave Gulch receives 5 to 9 inches of precipitation. The growing season is 100 to 130 days.

The soils have either a mesic or frigid temperature regime. Shallow and moderately deep soils are on the uplifts and shale uplands. Deep soils are on alluvial plains, dunes, and terraces. Most are calcareous and have light-colored surfaces. Many are strongly alkaline.

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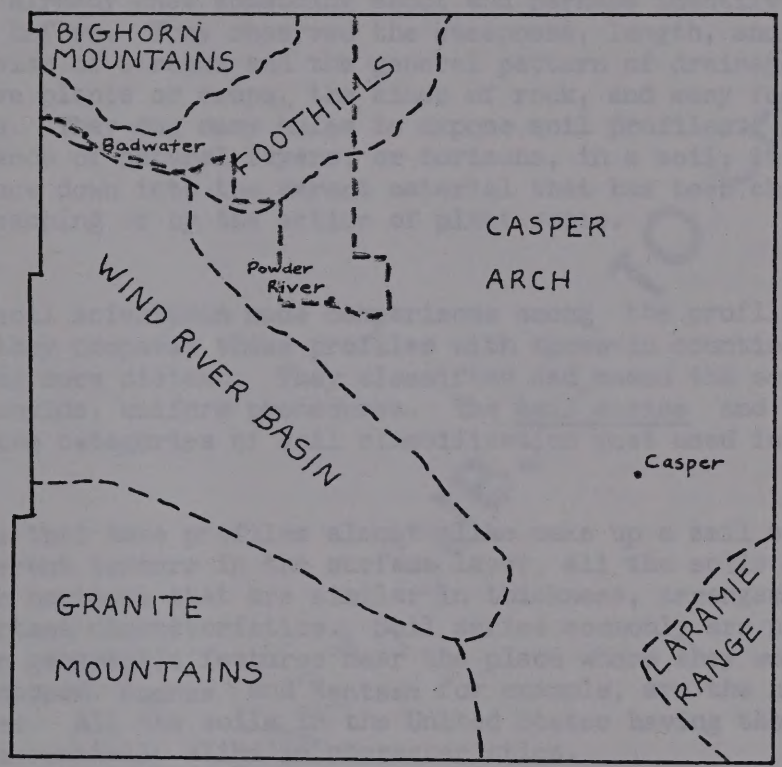
LOCATION MAP



MAJOR STRUCTURAL FEATURES
IN NATRONA COUNTY

---- Soil Survey Boundary

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are located, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes, the size of streams and the general pattern of drainage; the kinds of native plants or crops, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has been changed very little by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The soil series and the soil phase are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Soil series commonly are named for towns or other geographic features near the place where they were first observed and mapped. Bashus and Rentsac for example, are the names of two soil series. All the soils in the United States having the same series name are essentially alike in characteristics.

Soils of one series can differ in texture of the surface layer and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Rentsac, thin, 15 to 40 percent slopes is one of several phases within the Rentsac series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this publication was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a named soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series, and some have little or no soil. These kinds of mapping units are discussed in the section "Soil Maps for Detailed Planning."

While a soil survey is in progress, samples of soils are taken as needed for laboratory measurements and for engineering tests. Existing ratings of suitabilities and limitations (interpretations) of the soils are field tested and modified as necessary during the course of the survey, and new interpretations are added to meet local needs. This is done mainly through field observations of behavior of different kinds of soil for different uses under different levels of management. Also, data are assembled from other sources, such as test results, records, field experience, and other information available from state and local specialists. For example, data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so to be readily useful to different groups of users, among them farmers, managers of rangeland and woodland, engineers, planners, developers and builders, homebuyers, and those seeking recreation. Presenting the detailed information in an organized, understandable manner is the purpose of this publication.

Planning the Use and Management of the Soils

The soil survey is a detailed analysis and evaluation of the most basic resource of the survey area—the soil. It may be used to fit the use of the land, including urbanization, to the limitations and potentials of the natural resources and the environment and to help avoid soil-related failures in uses of the land.

During a soil survey soil scientists, conservationists, engineers, and others keep extensive notes, not only about the nature of the soils but also about unique aspects of behavior of these soils in the field and at construction sites. These notes include observations of erosion, drought damage to specific crops, yield estimates, flooding, the functioning of septic systems, and other factors relating the kinds of soil and their productivity, potentials, and limitations under various uses and management. In this way, field experience incorporated with measured data on soil properties and performance is used as a basis for predicting soil behavior.

Information in this section will be useful in applying basic facts about the soils to plans and decisions for use and management of soils for crops and pasture, range, woodland, and many nonfarm uses, including building sites,, highways and other transportation systems, sanitary facilities, parks and other recreational developments, and wildlife habitat. From the data presented, the potential of each soil for specified land uses may be determined, soil limitations to these land uses may be identified, and costly failures in homes and other structures, because of unfavorable soil properties, may be avoided. A site can be selected where the soil properties are favorable, or practices can be planned that will overcome the soil limitations.

Planners and others using the soil survey can evaluate the impact of specific land uses on the overall productivity of the survey area or other broad planning area, and on the environment. Both of these factors are closely related to the nature of the soil. Plans can be made to maintain or create a land use pattern in harmony with the natural soil.

Contractors can find information useful in locating sources of sand and gravel, road fill, and topsoil. Other information indicates the presence of bedrock, wetness, or very firm soil horizons that cause difficulty in excavation.

Health officials, highway officials, engineers and many other specialists can find useful information in this soil survey. The safe disposal of wastes, for example, is closely related to properties of the soil. Pavements, sidewalks, campsites, playgrounds, lawns, trees and shrubs, and most other uses of land are influenced by the nature of the soil.

$I04General soil map for broad land use planning

$I01The general soil map at the back of this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

$I01The general soil map can be used to compare the suitability of large areas for general land uses. Areas where the soils are suitable for a broad land use can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

$I01Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

United States Department of Agriculture

Soil Conservation Service

May 1982

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Description of Map Units

Natrona County General Soils Map

M1

This unit consists of shallow, moderately deep, and deep soils in the Big Horn Mountains. The shallow soils formed from gravelly or cobbly residuum on sloping to moderately steep ridges. They are less than 20 inches thick over hard or soft sedimentary or igneous bedrock. The moderately deep soils formed in loamy alluvium or colluvium on dipslopes, convex colluvial slopes, and in mountain valleys. They are 20 to 40 inches thick over hard or soft bedrock. These soils contain few to may rock fragments. The deep soils are more than 40 inches thick over bedrock. They formed in loamy alluvium or colluvium on nearly level to sloping alluvial fans in valleys and on moderately steep to steep concave slopes. Soils on concave slopes typically contain large amounts of rock fragments.

Included throughout this unit are small areas of igneous and sedimentary rock outcrop.

Vegetation in this unit consists of mid and tall grasses, sagebrush, and various forbs. Key species on the moderately deep and deep soils include Idaho fescue, Columbia needlegrass, rhizomatous wheatgrass, and big sagebrush (Loamy, Coarse Upland range sites). Key species on the shallow soils include bluebunch wheatgrass, Idaho fescue, Columbia needlegrass, and big sagebrush (Shallow Loamy, Shallow Igneous, Very Shallow range sites). Lodgepole and ponderosa pines occur on isolated areas on the moderately deep and deep soils (Woodland site). Average annual precipitation is 15 to 19 inches.

M2

This unit consists primarily of shallow and moderately deep soils. The shallow soils formed in gravelly or cobbly residuum on sloping to steep ridges and bedrock hillslopes. They are typically less than 20 inches thick over hard sedimentary or igneous bedrock. The moderately deep soils formed in loamy colluvium on hillslopes and in narrow mountain valleys. They are typically 20 to 40 inches thick over soft bedrock. Some soils contain many rock fragments.

Included in this unit are deep loamy soils on alluvial fans and colluvial hillslopes. Rock outcrop occurs in association with the shallow soils in this unit.

Vegetation in this unit consists of mid and tall grasses, sagebrush, and forbs. Key species on the shallow soils include bluebunch wheatgrass, Idaho fescue, prairie junegrass, and sagebrush (Shallow Loamy, Shallow Igneous, and Very Shallow range sites). Key species on the moderately deep soils include Idaho fescue, rhizomatous wheatgrass, Columbia needlegrass, and big sagebrush (Loamy, Coarse Upland range sites). Precipitation is 15 to 19 inches.

M3
This unit consists primarily of deep loamy soils that formed from alluvium on level to sloping fans in mountain valleys. It includes smaller areas of shallow gravelly and cobbly soils on hard bedrock ridges and dipslopes, and deep, wet loamy soils along drainages and springs.

Vegetation consists of mid and tall grasses, sagebrush, and forbs. Key species on the deep soils consists of western wheatgrass, Idaho fescue, Sandberg bluegrass, and big sagebrush (Loamy range site). Key species on the shallow soils include bluebunch wheatgrass, big sagebrush, and Idaho fescue (Shallow Loamy, Shallow Sandy range sites). Some shallow soils have mountain-mahogany as the dominant species (Mountain-Mahogany range site). Key species on the wet loamy soils include Nebraska sedge, tufted hairgrass, and rhizomatous wheatgrass (Subirrigated range site). Average annual precipitation is 15 to 19 inches.

M4
This unit consists of shallow, moderately deep, and deep soils in the mountains. The shallow and moderately deep soils formed from residuum or colluvium over residuum on rolling to steep bedrock controlled mountain slopes. Shallow very gravelly soils are less than 20 inches thick over hard igneous bedrock. Moderately deep very cobbly soils are 20 to 40 inches thick over hard sedimentary bedrock. The deep soils formed from loamy alluvium or colluvium on moderately steep mountain slopes in valleys.

Vegetation in this unit consists of conifers and mid grasses. Key species on the shallow and moderately deep soils include lodgepole pine, ponderosa pine, and Idaho fescue (Woodland site, Shallow Igneous, Shallow Loamy range site). Key species on the deep soils include aspen, Idaho fescue, and rhizomatous wheatgrass (Woodland site). Average annual precipitation is 15 to 19 inches.

M5
This unit consists of shallow gravelly soils and rock outcrop on relict granitic ridges. The shallow soils formed from residuum over hard granite on rough, broken ridges. Rock outcrop occurs throughout this area and is primarily granite.

Vegetation in this unit consists of short and mid grasses. Key species include bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass (Shallow Loamy, Shallow Igneous range sites). Average annual precipitation is 15 to 19 inches.

F1
This unit consists of shallow, moderately deep, and deep soils on rolling to moderately steep mountain foothills. The shallow soils formed from loamy and clayey residuum on rolling to broken sedimentary beds. They are less than 20 inches thick over soft shale, or soft

or hard sandstone. The moderately deep soils formed from loamy and clayey alluvium or residuum on rolling sedimentary beds. They are 20 to 40 inches thick over soft shale or sandstone. Some of these soils contain moderate amounts of rock fragments as outwash. The deep soils formed from medium to fine textured loamy, clayey, or very gravelly alluvium and are on rolling fans and terraces.

Included in this unit are scattered areas of soft and hard rock outcrop. Vegetation in this unit consists of mid grasses, sagebrush, and forbs. Key species on the shallow soils include blubunch wheatgrass, green needlegrass, western wheatgrass, and sagebrush (Shallow Loamy, Shallow Clayey range sites). Key species on the moderately deep and deep soils include western wheatgrass, green needlegrass, Indian ricegrass, thickspike wheatgrass, and sagebrush (Sandy, Loamy, Clayey range sites).

F2

This unit consists primarily of shallow soils on uplifted shale and sandstone beds. These soils formed from loamy and sandy residuum or alluvium over residuum. They are typically less than 20 inches thick over soft and hard sandstone, but some are over soft shale. About half these soils are very gravelly or very cobbly.

Deep loamy soils occur in small areas in this unit. They formed from alluvium on fans and narrow terraces. Sandstone and shale outcrops occur throughout this unit on ridges and steep escarpments.

Vegetation in this unit consists of mid grasses, forbs, and sagebrush. Key species on the shallow soils include bouebunch wheatgrass, Indian ricegrass, western wheatgrass, and needle-and-thread (Shallow Loamy, Very Shallow, Shallow Sandy range sites); mountain-mahogany occurs in some areas (Mountain-Mahogany range site). Key species on the deep loamy soils include western wheatgrass, needle-and-thread, and big sagebrush (Loamy range site). Average annual precipitation is 10 to 14 inches.

F3

This unit consists of shallow and deep red soils on steep escarpmants, bedrock dipslopes, and alluvial fans. The shallow soils formed from moderately coarse textured very gravelly or very cobbly residuum on moderately steep to steep escarpments and dipslopes. They are less than 20 inches thick over soft and hard sandstone. The deep soils formed from loamy alluvium on nearly level to sloping fans and toeslopes.

Vegetation in this unit consists of mid grasses and sagebrush. Key species on the shallow soils include bluebunch wheatgrass, needle-and-thread, big sagebrush, and junipers (Shallow Loamy, Shallow Breaks range sites). Key species on the deep soils include western wheatgrass, needle-and-thread, prairie junegrass, and big sagebrush (Loamy range site). Average annual precipitation is 10 to 14 inches.

F4
This unit consists of shallow and deep very gravelly soils on steep, gullied, calcareous sedimentary beds. The shallow soils formed from very gravelly residuum on steep ridges and upper hillslopes. They are typically less than 20 inches thick over hard sedimentary bedrock, but may be over soft bedrock in some areas. The deep soils formed from very gravelly and cobbly colluvium or high energy alluvium on steep slopes. They are typically highly calcareous.

Vegetation in this unit consists of short and mid grasses, forbs, sagebrush, and scattered coniferous trees. Key species on the shallow soils include bluebunch wheatgrass, western wheatgrass, and scattered junipers and/or limber pines (Very Shallow range site). Key species on the deep soils include bluebunch wheatgrass, needle-and-thread, big sagebrush, and phlox (Shallow Loamy, Loamy range sites). Average annual precipitation is 10 to 14 inches.

F5
This unit consists of shallow and moderately deep soils on rolling bedrock controlled uplands. The shallow soils formed from very gravelly sandstone residuum on convex ridges and knolls. The moderately deep soils formed from loamy alluvium on concave slopes. They are typically 20 to 40 inches thick over hard sandstone.

Vegetation on this unit consists of mid grasses and sagebrush. Key species on these soils include bluebunch wheatgrass, western wheatgrass, prairie junegrass, and big sagebrush (Shallow Loamy range site). Some sites on the shallow soils are dominated by mountain-mahogany (Mountain-mahogany range site). Average annual precipitation is 10 to 14 inches.

U1
This unit consists of shallow, moderately deep, and deep soils on rolling uplands and narrow alluvial fans. The shallow soils formed in loamy and clayey residuum on rolling uplands and in moderately steep drainages and gullies. They are typically less than 20 inches thick over soft shale or siltstone. The moderately deep soils formed in loamy alluvium or residuum on rolling uplands and drainage slopes. They are 20 to 40 inches thick over soft sandstone or sandy shale. The deep soils formed in loamy and sandy alluvium on rolling uplands and on narrow alluvial fans.

Vegetation in this unit consists of mid grasses, forbs, and sagebrush. Key species on the shallow soils include bluebunch wheatgrass, western wheatgrass, Gardner saltbush, and Sandberg bluegrass (Shallow Loamy, Saline Upland range sites). Key species on the moderately deep and deep soils include western wheatgrass, alkali sacaton, scattered greasewood, and Indian ricegrass (Loamy, Saline Lowland, Sandy range sites). Average annual precipitation is 5 to 9 inches.

U2

This unit consists of deep loamy and sandy soils on nearly level to rolling uplands, primarily on stabilized sand dunes. They formed from moderately coarse textured alluvium and eolian sand derived from sandstone and sandy shale.

Vegetation in this unit consists of mid grasses and sagebrush. Key species include western wheatgrass, prairie sandreed, needle-and-thread, and big sagebrush (Loamy, Sandy range sites). Average annual precipitation is 10 to 14 inches.

U3

This unit consists of shallow, moderately deep, and deep soils on gently rolling to moderately steep shale beds. The shallow soils formed from shale or sandstone residuum and typically occur on ridges and moderately steep convex slopes. The moderately deep soils formed from alluvium or residuum derived primarily from shale. They are on moderately steep concave slopes, toeslopes, and on convex slopes on rolling alluvial fans. The deep soils formed in moderately coarse to fine textured alluvium from shale or sandstone. They are on alluvial fans and narrow terraces.

Vegetation in this unit consists of mid grasses, forbs, and sagebrush. Key species on the shallow soils include rhizomatous wheatgrass, bluebunch wheatgrass, Gardners saltbush, needle-and-thread, and sagebrush (Shale, Saline Upland, Shallow Loamy, Shallow Clayey range sites). Key species on the moderately deep and deep soils include rhizomatous wheatgrass, needle-and-thread, prairie sandreed, green needlegrass, and sagebrush (Loamy, Sandy, Clayey, Impervious Clay range sites). Average annual precipitation is 10 to 14 inches.

U4

This unit consists of shallow, moderately deep, and deep soils on rolling to steep shale ridges and sandstone dipslopes and terraces. The shallow soils formed from shale or interbedded sandstone and gypsum on steep ridges, hillslopes, and in gullies. They are medium to fine textured loamy, clayey, or very gravelly soils. The moderately deep soils formed from loamy alluvium or residuum from sandstone or gypsum. They are on gently sloping to rolling bedrock terraces and moderately steep hillslopes. The deep soils formed from loamy and clayey alluvium on sloping fans and narrow terraces.

Vegetation in this unit consists of short and mid grasses and sagebrush. Key species on the shallow and moderately deep soils include bluebunch wheatgrass, rhizomatous wheatgrass, Indian ricegrass, and big sagebrush (Shallow Loamy, Shale, Saline Upland range sites). Key species on the deep soils include rhizomatous wheatgrass, needle-and-thread, prairie junegrass, and big sagebrush (Loamy range site). Average annual precipitation is 10 to 14 inches.

U5
This unit consists of shallow and deep soils on alternating dip and strike slopes on tilted bedrock uplands. The shallow soils formed from loamy or very gravelly sandstone or siltstone residuum on ridges, bedrock dipslopes, and escarpments. The deep soils formed from loamy and sandy alluvium on narrow, sloping fans on the lower ends of dipslopes and on escarpment toeslopes.

Vegetation in this unit consists of short and mid grasses, sagebrush, and conifers. Key species on the shallow soils include bluebunch wheatgrass, prairie junegrass, Sandberg bluegrass, and scattered limber pines (Shallow Loamy, Shallow Sandy, Very Shallow range sites); mountain-mahogany dominates some soils in this unit (Mountain-mahogany range site). Key species on the deep soils include rhizomatous wheatgrass, prairie junegrass, and big sagebrush (Loamy, Sandy range sites). Average annual precipitation is 10 to 14 inches.

U6
This unit consists of deep sandy soils on rolling sand dune topography. They formed from eolian sand and are relatively undeveloped soils.

Vegetation in this unit consists of mid and tall grasses and sagebrush. Key species include western wheatgrass, prairie sandreed, needle-and-thread, and silver sagebrush (Sands, Sandy range sites). Average annual precipitation is 10 to 14 inches.

U7
This unit consists of shallow, moderately deep, and deep soils on sloping to steep tilted sedimentary beds. The shallow soils formed from moderately coarse textured very gravelly residuum and loamy alluvium over residuum from sandstone or shale. They are less than 20 inches thick over soft or hard bedrock on ridges, escarpments, and upper ends of dipslopes. The moderately deep soils formed from loamy alluvium over residuum on dipslopes. They are 20 to 40 inches thick over soft or hard sandstone. The deep soils formed from medium textured loamy or very cobbly alluvium. They are on the lower end of dipslopes, and on sloping to gently rolling alluvial fans and colluvial toeslopes.

Vegetation in this unit consists of mid and tall grasses and sagebrush. Key species on the shallow soils and the deep very cobbly soils include bluebunch wheatgrass, needle-and-thread, western wheatgrass, and black sagebrush (Shallow Loamy range site). Key species on the moderately deep and deep loamy soils include western wheatgrass, needle-and-thread, big sagebrush, and prairie junegrass (Loamy range site). Average annual precipitation is 10 to 14 inches.

U8
This unit consists of shallow, moderately deep, and deep soils on rolling sedimentary beds and alluvial fans. The shallow soils formed from sandy and clayey sandstone and shale residuum. They are on sloping to moderately steep ridges and convex slopes and are less than 20 inches thick over soft shale or sandstone. The moderately deep soils formed

from moderately coarse textured alluvium over residuum and are 20 to 40 inches thick over soft shale or sandstone. They are on convex and concave slopes on rolling uplands. The deep soils formed from loamy alluvium on nearly level to sloping fans and toeslopes.

Included in this unit are small areas of rock outcrop, which consists of soft shale and sandstone.

Vegetation in this unit consists of mid grasses, forbs, and sagebrush. Key species on the shallow soils include bluebunch wheatgrass, rhizomatous wheatgrass, Gardners saltbush, and Indian ricegrass (Shallow Loamy, Shallow Sandy, Shallow Clayey, Saline Upland range sites). Key species on the moderately deep and deep soils include rhizomatous wheatgrass, needle-and-thread, Gardners saltbush, and big sagebrush (Loamy, Sandy, Saline Upland range sites). Average annual precipitation is 10 to 14 inches.

U9

This unit consists of shallow and moderately deep soils on steeply inclined sandstone and siltstone beds. The shallow soils formed from loamy and silty residuum on ridges and steep slopes. The moderately deep soils formed from loamy residuum or alluvium over residuum on concave slopes and in swales between sedimentary beds.

Rock outcrop occurs throughout this unit on ridges and in eroded areas on steep convex slopes.

Vegetation in this unit consists of short and mid grasses and sagebrush. Key species on the shallow soils include bluebunch wheatgrass, needle-and-thread, and threadleaf sedge (Shallow Loamy, Shallow Sandy range sites). Key species on the moderately deep soils include big sagebrush, western wheatgrass, needle-and-thread, and threadleaf sedge (Loamy ranbe site). Average annual precipitation is 10 to 14 inches.

U10

This unit consists of shallow and deep soils on nearly level to sloping alluvial fans and in moderately steep gullies. The shallow soils formed from moderately coarse and fine textured shale residuum. They are on moderately steep gully shoulders and in isolated areas on fans. The deep soils formed from loamy and clayey alluvium derived from shale. They are on nearly level to sloping alluvial fans.

Some of the soils in this unit have sodium accumulations and very strongly alkaline reactions.

Vegetation in this unit consists of short and mid grasses and shrubs. Key species on the shallow soils include bluebunch wheatgrass, Indian ricegrass, Gardners saltbush, needle-and-thread, and bottlebrush squirreltail (Saline Upland, Very Shallow, Shallow Loamy, Shallow Sandy range sites). Key species on the deep soils include Indian ricegrass, bluebunch wheatgrass, bottlebrush squirreltail, birdfoot

sagebrush, and rhizomatous wheatgrass (Loamy, Shallow Loamy, Impervious Clay range sites). Average annual precipitation is 5 to 9 inches.

U11
This unit consists of moderately deep and deep soils on undulating to rolling shale uplands and fans. The moderately deep soils formed from loamy alluvium over residuum on convex ridges and knolls. They are 20 to 40 inches thick over soft shale. Most of these soils have very strongly alkaline reactions. The deep soils formed from moderately coarse to fine textured alluvium on undulating fans and concave slopes on uplands. About half of these soils have very strongly alkaline reations.

Vegetation in this unit consists of mid grasses and sagebrush. Key species on these soils include western wheatgrass, Indian ricegrass, needle-and-thread, big sagebrush, and birdfoot sagebrush (Loamy, Impervious Clay, Sandy range sites). Average annual precipitation is 10 to 14 inches.

U12
This unit consists of shallow and moderately deep soils on sloping to steep hard shale beds. The shallow soils formed from fine textured channery residuum derived from shale. They are on shale ridges and steep escarpments and are less than 20 inches thick over soft and hard shale. The moderately deep soils formed from fine textured alluvium over residuum. They are on dipslopes 20 to 40 inches thick over predominantly hard shale.

Vegetation on this unit consists of mid grasses and sagebrush. Key species on the shallow soils consist of bluebunch wheatgrass, western wheatgrass, big sagebrush, and green needlegrass (Shallow Loamy, Shallow Clayey range sites); soils on escarpments and on eroded spots contain scattered limber pine (Very Shallow range site). Key species on the moderately deep soils include western wheatgrass, big sagebrush, black sagebrush, and green needlegrass (Loamy, Clayey range sites). Average annual precipitation is 10 to 14 inches.

A1
This unit consists of deep medium textured soils on level alluvial fans and flood plains. These soils formed from loamy and silty alluvium derived from red sandstone and siltstone. Some soils have horizons of sodium accumulation and very strongly alkaline reactions.

Vegetation in this unit consists of mid grasses. Key species include western wheatgrass, needle-and-thread, basin wildrye, and scattered sagebrush (Loamy, Lowland range sites). Some areas are completely devoid of sagebrush. Average annual precipitation is 10 to 14 inches.

A2
This unit consists primarily of deep loamy and clayey soils on alluvial fans, terraces, and floodplains. Many of these soils have horizons of

ADVANCE DATA
SUBJECT TO CHANGE

sodium accumulations and very strongly alkaline reactions.

Vegetation in this unit consists of mid grasses and woody shrubs. Key species include western wheatgrass, Indian ricegrass, birdfoot sagebrush, big sagebrush, and Gardners saltbush (Loamy, Impervious Clay, Clayey, Saline Upland range sites). Average annual precipitation is 10 to 14 inches.

A3

This unit consists of deep medium textured loamy and very gravelly soils formed from mixed alluvium. They are on floodplains, fans, and high energy stream terraces. These soils lack horizons of sodium accumulation.

Vegetation in this unit consists of mid grasses and sagebrush. Key species include western wheatgrass, needle-and-thread, prairie junegrass, and big sagebrush (Loamy range site). Average annual precipitation is 10 to 14 inches.

A4

This unit consists of deep medium textured very gravelly and cobbly soils, and loamy soils on alluvial fans and strath terraces. They formed from high energy outwash derived primarily from red sandstone and siltstone. Some of the deep loamy soils have horizons of sodium accumulations and very strongly alkaline reactions.

Vegetation in this unit consists of short and mid grasses and scattered sagebrush. Key species on the very gravelly and cobbly soils include bluebunch wheatgrass, needle-and-thread, western wheatgrass, and threadleaf sedge (Shallow Loamy range site). Key species on the deep loamy soils include western wheatgrass, needle-and-thread, and scattered big sagebrush (Loamy range site). Average annual precipitation is 10 to 14 inches.

T1

This unit consists primarily of deep loamy soils and deep medium textured very gravelly soils on nearly level to rolling relict alluvial terraces. These soils formed from high energy alluvial outwash from mixed sedimentary and igneous bedrock sources.

Vegetation in this unit consists of short and mid grasses and sagebrush. Key species in the deep loamy soils include western wheatgrass, needle-and-thread, prairie junegrass, and sagebrush (Loamy range site). Key species on the deep very gravelly soils include western wheatgrass, bluebunch wheatgrass, threadleaf sedge, and big sagebrush (Shallow Loamy range site). Average annual precipitation is 10 to 14 inches.

Soil Maps for Detailed Planning

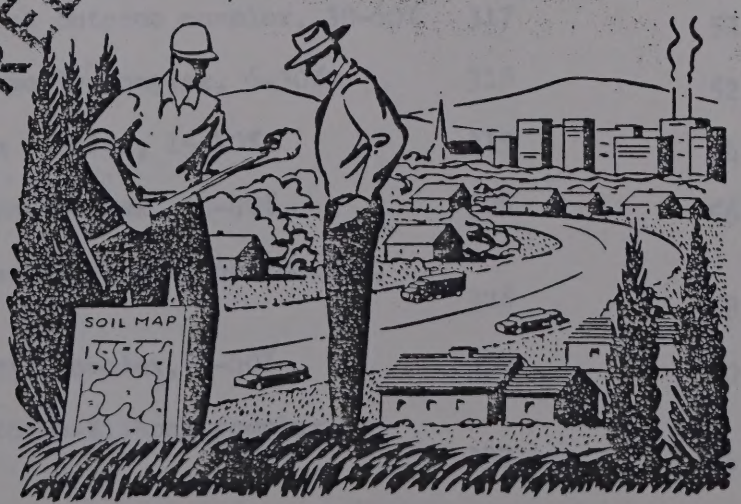
The kinds of soil (mapping units) shown on the detailed soil maps at the back of this publication are described in this section. These descriptions together with the soil maps can be useful in determining the potential of soil and in managing it for food and fiber production, in planning land use and developing soil resources, and in enhancing, protecting, and preserving the environment. More detailed information for each soil is given in the section "Planning the Use and Management of Soils."

Preceding the name of each mapping unit is the symbol that identifies the unit on the detailed soil map. Each mapping unit description includes general facts about the soil and a brief description of the soil profile. The potential of the soil for various major land uses is estimated. The principal hazards and limitations are indicated, and the management concerns and practices for the major uses are discussed.

A mapping unit represents an area on the landscape and consists of a dominant soil or soils for which the unit is named. Most mapping units have one dominant soil, but some have two or more dominant soils. A mapping unit commonly includes small, scattered areas of other soils. The properties of some included soils can differ substantially from those of the dominant soil or soils and thus greatly influence the use of the dominant soil. How the included soils may affect the use and management of the mapping unit is discussed.

In most areas surveyed there is land that has little or no identifiable soil and supports no vegetation. This land, called miscellaneous areas, is delineated on the map and given descriptive names. Gravel Pit is an example. Areas too small to be delineated are identified by special symbols on the soil maps.

PRELIMINARY PROJECT HANDOUT



LIST OF MAPPING UNITS

Soil Name	Soil Symbol	Page Description	Page Illustration
Arvada-Absted-Bone complex, 0-6%	202	21	-
Cushman-Forkwood association, rolling	203	23	-
Effington-Uffens complex, 0-6%	205	25	-
Hiland sandy loam, 0-6%	212	27	-
Vona-Hiland complex, 3-15%	213	29	-
Uffens, saline-Typic Torriorthents, saline complex, 0-3%	217	31	-
Forkwood-Wyarno complex, 0-6%	222	33	-
Lupinto-Bosler complex, 6-30%	223	35	-
Ethete-Emblem complex, 0-6%	225	37	-
Bidman-Absted complex, 0-6%	226	39	-
Heldt-Petrie complex, 1-6%	246	40	-
Orella-Rock outcrop complex, 3-30%	301	42	-
Shingle-Tassel-Rock outcrop complex, 10-40%	302	43	-
Haterton-Cragosen-Worfman complex, 15-60%	308	45	-
Mudray-Bributte-Birdsley complex, 6-30%	311	47	-
Haverdad-Glenberg complex, 0-3%	313	49	-
Rentsac-Rock outcrop complex, steep	316	50	-
Thermopolis-Rock outcrop complex, 30-60%	317	51	189
Sinkson-Thermopolis complex, 6-30%	318	52	198
Rentsac-Blazon complex, 15-40%	319	54	-
Crownest-Blazon complex, 10-40%	326	56	-
Neldore-Moyerson-Rock outcrop complex, 10-40%	328	58	199
Brownsto-Lupinto complex, 6-40%	332	60	-
Sunup-Rock outcrop-Kishona complex, 10-40%	337	62	-
Forelle loam, 2-9%	388	64	-
Blazon-Diamondville complex, 3-20%	389	65	-

LIST OF MAPPING UNITS

Soil Name	Soil Symbol	Page Description	Page Illustration
Thedalund-Shingle-Kishona complex, 6-40%	402	67	-
Yampa loam, 0-4%	425	69	-
Embry-Vona-Tassel complex, 5-20%	435	70	-
Rentsac-Thermopolis-Rock outcrop complex, steep	458	72	-
Ulric-Grail complex, 2-15%	475	74	-
Rock River-Worfman complex, rolling	489	76	-
CadomaVariant-Keyner complex, 2-12%	600	78	-
Louviers and Midway soils, 10-40%	601	81	197
Hiland loamy sand, 2-15%	602	84	188
Farlow-Starley complex, 10-30%	604	86	193
Parkay Variant-Rubble land association, sloping to steep	605	89	190,203
Kezar Variant-Irigul-Clayburn association, hilly	606	92	201
Cathedral very gravelly loam, 20-45%	607	96	-
Clayburn-Moslander association, level to gently sloping	609	99	202,204
Boettcher-Brownsto complex, 10-30%	611	102	194
Combined with 458	612		
Rock outcrop	700	105	-
Griffy Variant-Kishona Variant association, gently sloping to moderately steep	701	106	191,196
Forelle-Lupinto association rolling	702	109	-
Diamondville Variant-Rentsac-Worfman Variant complex, 4-20%	703	113	198,199
Sinkson-Brownsto association, level to gently sloping	704	117	189
Brownsto-Thermpolis association, gently sloping to steep	705	121	189

Soil Name	Soil Symbol	Page: Description	Page: Illustration
Rentsac, thin-Rock outcrop- Rentsac complex, 5-30%	706	125	195,198, 189
Rock outcrop-Rentsac thin association, steep to very steep	707	129	195
Starley-Rock outcrop complex, 4-25%	708	132	192,193
Forsey-Starley complex, 8-35%	709	135	192
Decross-Woosley association, sloping	710	139	192
Castner-Rock outcrop complex, 5-25%	711	142	195
Inchau-Clayburn-Chittum complex, 4-20%	712	145	-
Bachus-Clayburn association, undulating	713	149	-
Brownsto-Rentsac thin complex, 15-40%	714	152	-
Bributte gravelly clay loam, 5-40%	801	156	196
Bessemer sandy loam, 1-10%	802	159	197
Neldore Variant-Rock outcrop complex, 3-10%	804	161	199
Rock outcrop-Neldore Variant complex, 10-60%	805	164	199
Patent-Blazon complex, 3-15%	806	167	198
combined with 706	809		
Sinkson loam, 0-6%	810	170	189
Moran-Rock outcrop complex, 10-40%	815	172	200
Cabin-Irigul Variant complex, 6-40%	816	174	200,202, 204
combined with 713	817		
Bachus Variant-Forsey Variant complex, 4-20%	903	178	203,204
Inchau Variant-Pagosa association, undulating to rolling	904	182	203
Chittum-Nielsen-Rock outcrop complex, 2-10%	908	185	-

ADVANCE DATA
SUBJECT TO CHANGE

202 Arvada - Absted - Bone complex, 0 to 6% slopes

This map unit is on nearly level to gently sloping alluvial fans. This unit is widely scattered in the 5800 to 6200 feet elevation zone. Slope is 0 to 6 percent.

The native vegetation is mainly birdsfoot sage, threadleaf sedge, needleandthread, big sage, western wheatgrass, cactus.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 40 percent Arvada loam, 0 to 3% slopes, 30 percent Absted very fine sandy loam, 0 to 6% slopes, and 15 percent Bone sandy loam, 0 to 1% slopes. Arvada is on flatter surfaces with birdsfoot sage cover. Absted is on hummocky surfaces with big sage cover. Bone is on flat micro basins. These soils are in a very complex patterns.

The Arvada soil is deep and well drained. It formed in slope wash fan alluvium derived dominantly from strongly alkaline shale.

The surface layer is light gray loam 3 inches thick. The subsoil is light brownish gray heavy clay loam 16 inches thick. The upper substratum is pale olive clay loam 16 inches thick, and is over pale olive sandy clay loam materials to 60 inches. In some areas the surface layer is fine sandy loam.

Permeability of the Arvada soil is very slow. Available water capacity is low to medium. Effective rooting depth is 60 inches or more. Runoff is medium to rapid, and the hazard of water erosion is slight.

The Absted soil is deep and well drained. It formed in fan alluvium derived dominantly from strongly alkaline shale.

The surface layer is light gray, mildly alkaline, very fine sandy loam 4 inches thick. The upper subsoil is pale brown moderately alkaline, silty clay 6 inches thick. The lower subsoil is pale brown, very strongly alkaline, calcareous, silty clay 6 inches thick. The upper substratum is light yellowish brown, calcareous, very strongly alkaline silty clay 16 inches thick and is over light brownish yellow, calcareous, very strongly alkaline clay loam to 60 inches. In some areas the surface layer is loam.

Permeability of the Absted soil is slow. Available water capacity is low to medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Bone soil is deep and imperfectly drained. It formed in very strongly alkaline fan alluvium derived dominantly from strongly alkaline shale.

The surface layer is white, moderately alkaline, sandy loam 2 inches thick, and is over a very thin, light olive brown, moderately alkaline, clay loam about 3 inches thick. Below this is 55 inches of pale olive, calcareous, very strongly alkaline clay loam. In some areas the surface layer is loam.

Permeability of the Bone soil is very slow. Available water capacity is very low. Effective rooting depth is 10 inches. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Petrie soils intermingled with Arvada soils, 10 percent Arvada soils with 5 to 7 inches surface layer, 5 percent Keyner soils on hummocky areas, and 5 percent Heldt soils on upper slopes. In some areas the Orella soils are included in mapping, as well as a clayey sodic soil, with shale at 20 to 40 inches.

Arvada - Impervious clay range site, 10 to 14 inches precipitation zone.

Absted - loamy range site, 10 to 14 inch precipitation zone.

Bone - Impervious clay range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

203 Cushman - Fort Collins Association, rolling

This map unit is on sidehill slopes, footslopes and short alluvial fans. This unit is scattered throughout the northern part of the survey area. Slope is 3 to 15 percent.

The native vegetation is mainly big sagebrush, western wheatgrass, needleandthread, blue grama and cactus. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 45 percent Cushman very fine sandy loam 6 to 15 percent slopes, and 30 percent Fort Collins loam, 3 to 6 percent slopes.

Cushman is on sidehill slopes, and Fort Collins in on footslopes and fans.

The Cushman soil is moderately deep and well drained. It formed in residuum and local slope wash materials derived dominantly from siltstone.

The surface layer is yellowish brown, mildly alkaline very fine sandy loam 3 inches thick. The upper subsoil is brown, mildly alkaline clay loam 6 inches thick. The lower subsoil is pale brown, calcareous, moderately alkaline clay loam 10 inches thick. The substratum is light brownish gray, calcareous, moderately alkaline clay loam 11 inches thick, and rests on soft siltstone. In some areas the surface layer is loam.

Permeability of the Cushman is moderate. Available water capacity is moderately high. Effective rooting depth is 20 to 40 inches. Runoff is slow medium, and the hazard of water erosion is slight to moderate.

The Fort Collins soil is deep and well drained. It formed in slopewash alluvium derived dominantly from sandstone and loamstone. The surface layer is light brownish gray, mildly alkaline loam 2 inches thick. The upper subsoil is yellowish brown, mildly alkaline clay loam 6 inches thick. The lower subsoil is pale brown, calcareous, strongly alkaline, light clay loam 8 inches thick. The substratum is light yellowish brown, calcareous, moderately alkaline loam 20 inches thick. In some areas the surface layer is very fine sandy loam.

Permeability of the Fort Collins soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Shingle soils on upper hillsides and ridgecrests, 10 percent Zigweid soils on fans

and 5 percent Kim soils on fans. In some areas Keyner soils are on fans. On the Broad Mesa sheet areas of Bidman soils are inclusions, on flatter fans.

The potential plant community on the Cushman and Fort Collins soils is mainly western wheatgrass, needle and thread, olive grama and big sagebrush. As the ecological condition deteriorates, big sagebrush and short grasses, mainly blue grama increase. As the ecological condition further deteriorates, cactus, annuals, and broom snakeweed invade. The potential plant community produces about 1500 pounds of air-dry vegetation per acre in normal years. Production varies from 2000 pounds in favorable years to 850 pounds in unfavorable years.

Cushman and Fort Collins soils are in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

205 Effington - Uffens complex, 0 to 6 percent slopes

This map unit is on nearly level to gently sloping alluvial fans in the Arminto area. Slope is 0 to 6 percent. The native vegetation is mainly birdsfoot sagebrush, bottlebrush squirreltail, and Indian ricegrass. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 5 to 9 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 45 percent Effington silty clay loam, and 30 percent Uffens very fine sandy loam.

The Effington and Uffens soils are intermingled in a complex pattern on the alluvial fans.

The Effington soil is deep and moderately well drained. It formed in alluvial fan materials derived dominantly from very strongly alkaline shales.

Effington soils have a surface layer that is a light brownish gray, calcareous, moderately alkaline, silty clay loam 2 inches thick. The subsoil is light brownish gray, calcareous, very strongly alkaline, silty clay loam 16 inches thick. The substratum is light olive gray, calcareous, very strongly alkaline, silty clay, grading into a silty clay loam extending to depths of 60 inches. In some areas the surface layer is silty clay.

Permeability of the Effington soil is very slow. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Uffens soil is deep and well drained. It formed in alluvial fan materials derived dominantly from very strongly alkaline sedimentary formations.

Uffens soils have a surface layer that is a pale brown, calcareous, moderately alkaline, sandy loam 4 inches thick. The upper subsoil is brown, calcareous, very strongly alkaline, sandy clay loam 8 inches thick. The lower subsoil is light yellowish brown, calcareous, very strongly alkaline sandy clay loam 4 inches thick. The substratum is light yellowish brown or brown, calcareous, very strongly alkaline, loam extending to depths of at least 60 inches. In some areas the surface layer is loam or fine sandy loam.

Permeability of the Uffens soil is moderately slow. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 15 percent Binton soils and

10 percent sandy clay loam soils that are not very strongly alkaline. Binton soils are intermingled with Effington and Uffens soils. The sandy clay loam soils occur adjacent to narrow drainages.

Effington and Uffens soils are in the impervious clay range site, 5 to 9 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

212 Hiland - Olney complex, 0 to 6 percent slopes

This map unit is on alluvial plains and gently rolling uplands. The largest areas occur south of Hiland. Slope is 0 to 6 percent. The native vegetation is mainly big sagebrush, needleandthread, bluebunch wheatgrass, cactus and bluegrama. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 49 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 45 percent Hiland loamy sand, 0 to 6 percent, 30 percent Olney sandy loam, 0 to 6 percent, and 25 percent inclusions.

Hiland (0 to 6%) is on convex slopes and Olney (0-6%) is on convex slopes.

The Hiland soil is deep and well drained. It formed in alluvial sand and old wind deposits derived dominantly from calcareous sandstone.

The Hiland soils have a surface layer that is a pale brown neutral, loamy sand, 2 inches thick. The subsoil is yellowish brown, mildly alkaline, sandy clay loam 20 inches thick. The upper substratum is light yellowish brown calcareous, moderately alkaline, loamy sand about 12 inches thick. The lower substratum is a light gray, calcareous, strongly alkaline, sand to depths of at least 60 inches. In some areas the surface layer is sandy loam.

Permeability of the Hiland soil is moderate. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Olney soil is deep and well drained. It formed in alluvium derived dominantly from calcareous sandstone. The surface layer is grayish brown, neutral, sandy loam, 3 inches thick. The upper subsoil is yellowish brown, mildly alkaline, sandy clay loam 17 inches thick. The lower subsoil is light yellowish brown, calcareous, moderately alkaline, sandy loam 6 inches thick. The substratum is yellowish brown, calcareous, moderately to strongly alkaline, sandy loam to 60 inches. In some areas the surface layer is fine sandy loam or loam.

Permeability of the Olney soil is moderate. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Terry, Bowbac and Vona on shoulders and knolls (dunes), 10 percent Fort Collins and Fort Collins over sand in depressions, 5 percent Keyner and Absted soils on sidehills, and trace percent of gravelly soil and knobs. Cushman and Orella soils are in some locations.

Hiland - loamy range site, 10 to 14 inch precipitation zone.

Olney - loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

213 Vona - Olney complex, 3 to 15 percent slopes

This map unit is on gently undulating alluvial plains (uplands). The largest areas of this unit are south of Hiland. Slope is 3 to 15 percent. The native vegetation is mainly big sagebrush, western wheatgrass, and fringed sagewort. Elevation is 5500 to 6500 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F., and the average frost-free season is 90 to 120 days.

This unit is 40 percent Olney sandy loam, and 40 percent Vona sandy loam.

Olney is on concave slopes and depressions, and Vona is on convex and rolling slopes.

The Vona soil is deep and well drained. It formed in eolian deposits or partly reworked alluvium derived dominantly from sedimentary rock.

Vona soils have a surface layer that is a pale brown, neutral, sandy loam about 6 inches thick. The subsoil is a light yellowish brown, mildly alkaline, sandy loam 18 inches thick. The substrata is a light yellowish brown, calcareous, moderately alkaline, fine sandy loam to depths of at least 60 inches.

Permeability of the Vona soil is moderately rapid. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Olney soil is deep and well drained. It formed in alluvium derived dominantly from sandstone.

Olney soils have a surface layer that is a pale brown, neutral, sandy loam about 2 inches thick. The next layer is a yellowish brown, mildly alkaline, sandy loam about 3 inches thick. The subsoil is a light yellowish brown, moderately alkaline, sandy clay loam 21 inches thick. The substrata is a very pale brown, calcareous, moderately alkaline, fine sandy loam to depths of at least 60 inches.

Permeability of the Olney soil is moderate. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Dwyer (Otero) on dunes, 10 percent Fort Collins in valleys and in narrow drainages. In some locations areas of Cushman are included.

Vona soils is in the sandy range site, 10 to 14 inch precipitation zone.

Olney soil is in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

217 Uffens, saline-Typic Torriorthents, saline complex, 0 to 3 percent slopes

This map unit is on alluvial fans dissected by wet drainages. Slope is 0 to 3 percent. The native vegetation is mainly greasewood and alkali sacaton. Elevation is 5800 to 6100 feet.

The average annual precipitation is about 5 to 9 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 50 percent Uffens saline, 0 to 3 percent slopes, and 30 percent Typic Torriorthents, saline, 0 to 3 percent slopes.

Uffens saline is on alluvial fans above wet drainages. Typic Torriorthents, saline is on alluvial fans adjacent to wet drainages, and in low spots.

The Uffens, saline soil is deep and has somewhat restricted drainage. It formed in alluvial fan segments derived dominantly from slope wash from alkaline shales.

Uffens, saline soils have a surface layer that is a pale yellow, moderately alkaline very fine sandy loam 5 inches thick. The subsoil is light yellowish brown, saline and very strongly alkaline clay loam 11 inches thick. The substratum is light yellowish brown, saline and very strongly alkaline loam 44 inches thick. In some areas the surface layer is loam, clay loam.

Permeability of the Uffens saline soil is slow. Available water capacity is low to medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Typic Torriorthents saline soil is poorly drained and deep. It formed in slope wash alluvium derived dominantly from alkaline shales. There is a fluctuating undertable.

Typic Torriorthents saline soils have a surface layer that is a very pale brown fine sandy loam 2 inches thick. The underlying layer is thickly stratified yellowish brown clay loam and sandy clay loam to 60 inches, that is very strongly alkaline and highly saline. In some areas the surface layer is loam.

Permeability of the Typic Torriorthents, saline soil is slow and permeability is affected by a fluctuating water table. Available water capacity is low to medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent barren alkali spots on alluvial fans, intermingled with Uffens, saline; 5 percent Effington, saline soils on fan surfaces; and 5 percent

very strongly alkaline clay loam soils intermingled with Uffens saline soils.

The Uffens, saline and the Typic Torriorthents, saline soils are in the saline lowland range site, 5 to 9 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

222 Forkwood ~~Fort Collins~~ - Wyarno complex, 0 to 6 percent slopes

This map unit is on nearly level to gently sloping alluvial fans. The unit occurs west of Hiland and in the Poison Spider area. Slope is 0 to 6 percent. The native vegetation is mainly big sagebrush, needleandthread grass, prairie junegrass, and cactus. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 45 percent Fort Collins loam, 0 to 6 percent slopes, and 30 percent Wyarno silty clay loam, 0 to 3 percent slopes.

Forkwood ~~Fort Collins~~ is on convex slopes and Wyarno is on concave slopes.

Forkwood ~~Fort Collins~~ soil is deep and well drained. It formed in alluvium derived dominantly from shale and sandstone.

Forkwood ~~Fort Collins~~ soils have a surface layer that is a pale brown, neutral loam 2 inches thick. The subsoil is brown, mildly alkaline, clay loam 14 inches thick. The substratum is very pale brown, calcareous, moderately alkaline, sandy clay loam to depths of at least 60 inches.

Permeability of the Forkwood ~~Fort Collins~~ soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight.

The Wyarno soil is deep and moderately well drained. It formed in alluvium derived dominantly from shales and sandstones.

Wyarno soils have a surface layer that is a brown, mildly alkaline, silty clay loam 1 inch thick. The subsoil is brown, mildly to moderately alkaline, clay loam 14 inches thick. The substratum is light yellowish brown, calcareous, moderately alkaline, clay loam to depths of more than 60 inches.

Permeability of the Wyarno soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 15 percent Bidman soils in basins, 10 percent Absted soils on alluvial fans, and 5 percent Keyner soils on alluvial fans.

The Forkwood ~~Fort Collins~~ soil is in the loamy range site, 10 to 14 inch precipitation zone.

The Wyarno soil is in the clayey range site, 10 to 14 inch

precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

223 Lupinto - Bosler complex, 6 to 30 percent slopes

This map unit is on reworked outwash terraces consisting of sloping benches and moderately steep to steep ridges. The largest areas occur on the Ervay Basin and Ervay Basin S.W. sheets. Slope is 6 to 30 percent. The native vegetation is mainly big sagebrush, black sagebrush, prairie junegrass, and needleandthread grass. Elevation is 6700 to 7000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 110 days.

This unit is 50 percent Lupinto gravelly loam, 10 to 30 percent slopes, and 30 percent Bosler fine sandy loam, 6 to 10 percent slopes.

Lupinto variant is on ridges, convex slopes, and on drainage side slopes. Bosler is on benches and concave slopes.

The Lupinto soil is deep and well drained. It formed in gravelly materials derived dominantly from outwash from higher landscapes.

Lupinto soils have a surface layer that is a yellowish brown gravelly loam 2 inches thick. The subsoil is strong brown, very gravelly clay loam 8 inches thick and calcareous in the lower part. The substratum is brownish yellow, calcareous, very gravelly loam 38 inches thick, and is underlain by siltstone at 48 inches. In some areas the surface layer is 40 to 50 percent paved with gravel and cobble.

Permeability of the Lupinto soil is moderate. Available water capacity is medium. Effective rooting depth is 40 to 60 inches. Runoff is medium to moderately rapid, and the hazard of water erosion is severe.

The Bosler soil is deep and well drained. It formed in sandy, gravelly, calcareous alluvium.

Bosler soils have a surface layer that is a brown, mildly alkaline, sandy loam 4 inches thick. The subsoil is yellowish brown, sandy clay loam 12 inches thick. The upper substratum is white, calcareous, moderately alkaline, gravelly loam about 6 inches thick. The underlying stratum is a very pale brown, calcareous, moderately alkaline, very gravelly sandy loam 6 inches thick. The lower substratum is a very pale brown, calcareous, moderately alkaline, very gravelly sand to depths of at least 60 inches. In some areas the surface layer is loam.

Permeability of the Bosler soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent deep gravelly and

cobbly soils on steeper ridges, 5 percent shallow gravelly soils on ridges, similar to Cragosen soils and 5 percent sandy-gravelly soils in drainages. Along the west side of Ervay Basin there are stony alluvial soils and wet soils in the Deer Creek stream channel. On the north side of Ice Cave Mountain, in Section 32, T. 30N., R. 78W., areas of this unit, on high benches, receive more precipitation than other areas.

Lupinto soils are in the shallow loamy range site, 10 to 14 inch precipitation zone.

Bosler soils are in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

225 Ethete - Emblem complex, 0 to 6 percent slopes

This map unit is on gently sloping to sloping outwash alluvial fans, and high terraces. This unit is in the Alcova area, small areas are on the Alcova sheet. Slope is 0 to 6 percent.

The native vegetation is mainly threadleaf sedge, needleandthread grass, and Indian ricegrass. Elevation is 6000 to 6400 feet.

The average annual precipitation is about 5 to 9 inches, the average annual air temperature is 45 to 49 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 40 percent Ethete and 30 percent Emblem. Ethete is on sloping surfaces and Emblem is on early level surfaces.

The Ethete soil is deep and well drained. It formed in alluvial fan materials derived dominantly from a variety of rock.

Ethete soils have a surface layer that is a pale brown, mildly alkaline fine sandy loam 2 inches thick. The upper subsoil is yellowish brown, mildly alkaline, sandy clay loam 9 inches thick. The lower subsoil is pale brown, calcareous, moderately alkaline, sandy clay loam 10 inches thick. The substratum is light gray, calcareous, strongly alkaline, sandy clay loam 11 inches thick over light yellowish loamy sand extending to depths of at least 60 inches. In some areas the surface layer is loam and sandy loam.

Permeability of the Ethete soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Emblem soil is deep and well drained. It formed in calcareous alluvial fan materials derived dominantly from mixed outwash from higher areas. Emblem soils have a surface layer that is pale brown, calcareous, moderately alkaline, fine sandy loam 3 inches thick. The underlying layer is brown, calcareous, moderately alkaline, loam 5 inches thick. The next layer is a very pale brown, calcareous, strongly alkaline, loam 9 inches thick. The upper substratum is a very pale brown, calcareous, strongly alkaline, gravelly sandy clay loam 9 inches thick. The lower substratum is a light yellowish brown, calcareous, moderately alkaline, very gravelly sandy loam extending to a depth of at least 60 inches.

Permeability of the Emblem soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Garland soils on alluvial fans intermingled with Ethete soils, 10 percent stony-gravelly soils on low ridges and adjacent to drainages, 5 percent

Uffens soil on flat areas with birdsfoot sagebrush, and 5 percent sandy clay loam with sands above 10 inches on alluvial fan areas. On some high terraces the Garland soils are in troughs and concave surfaces, and make up as much as 20 percent of the area.

Ethete soil is in the loamy range site, 5 to 9 inch precipitation zone.

Emblem soil is in the shallow loamy range site, 5 to 9 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

226 Bidman - Absted complex, 0 to 6 percent slopes

This map unit is on nearly level to gently sloping alluvial fans. It is scattered through the western part of the area. Slope is 0 to 6 percent. The native vegetation is mainly birdsfoot, big sagebrush, western wheatgrass prairie junegrass, Sandberg bluegrass and cactus. Elevation is 6200 to 6300 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F., and the average frost-free season is 90 to 120 days.

This unit is 50 percent Bidman loam, 0 to 3 percent slopes, and 25 percent Absted loam, 0 to 6 percent slopes. The Bidman and Absted soils are intermingled on alluvial fans.

The Bidman soil is deep and well drained. It formed in alluvium derived dominantly from shale and sandstone.

The Bidman soils have a surface layer that is pale brown neutral loam 2 inches thick. The subsoil is dark yellowish brown neutral to mildly alkaline clay loam 22 inches thick. The substratum is light yellowish brown calcareous, moderately alkaline clay loam to depths of at least 60 inches.

Permeability of the Bidman soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Absted soil is deep and well drained. It formed in alluvium derived dominantly from strongly alkaline shale.

The Absted soils have a surface layer that is a brown neutral clay loam 4 inches thick. The upper subsoil is yellowish brown mildly alkaline clay loam 4 inches thick. The lower subsoil is yellowish brown calcareous, moderately alkaline, clay loam 10 inches thick. The substrata is light yellowish brown, calcareous, moderately alkaline, clay loam 12 inches thick. The next layer is a light yellowish brown, calcareous, moderately alkaline sandy loam 8 inches thick. The lower substrata is a pale yellow, calcareous, very strongly alkaline clay loam to a depth of more than 60 inches. In some areas the surface layer is loam.

Permeability of the Absted soil is slow. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent moderately deep very strongly alkaline soils on rolling ridges, 5 percent Ulm on alluvial fans, 5 percent Olney along edges coming in from higher landscapes, and 5 percent Vona along ridges.

Bidman and Absted soils are in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

246 Heldt - Petrie complex, 1 to 6 percent slopes

This map unit is on gently sloping alluvial fans. Slope is 1 to 6 percent. The largest areas are mapped on the Oil Mountain and Reid Canyon sheets. The native vegetation is mainly big sagebrush, western wheatgrass, and birdsfoot sagebrush. Elevation is 5500 to 6000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 50 percent Heldt clay loam, 1 to 6 percent slopes, and 20 percent Petrie clay loam, 1 to 6 percent slopes.

Heldt is on alluvial fans with big sage cover, Petrie is on alluvial fans intermingled with Heldt soils in areas dominated by birdsfoot sage.

The Heldt soil is deep and well drained. It formed in fine textured slopewash materials derived dominantly from nearby shale uplands.

Heldt soils have a surface layer that is a grayish brown, mildly alkaline clay loam 2 inches thick. The upper subsoil is light brownish gray, calcareous, moderately alkaline, silty clay 11 inches thick. The lower subsoil is pale brown, calcareous, strongly alkaline, silty clay 10 inches thick. The substratum is light yellowish brown, calcareous, strongly alkaline, heavy clay loam to 60 inches or more, and is very strongly alkaline in some profiles.

Permeability of the Heldt soil is slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

The Petrie soil is deep and well drained. It formed in very strongly alkaline materials derived dominantly from shale.

Petrie soils have a surface layer that is pale brown, calcareous, strongly alkaline, clay loam 3 inches thick. The subsoil is light yellowish brown, calcareous, very strongly alkaline, clay loam 16 inches thick. The underlying layer is yellowish brown, calcareous, strongly alkaline, silty clay 12 inches thick. The substratum is yellowish brown, calcareous, very strongly alkaline silty clay to depths of 60 inches. In some areas the surface layer is silty clay.

Permeability of the Petrie soil is very slow. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Zigweid soils on fans, intermingled with Heldt soils, 10 percent deep clay soils

with pH ranging from 8.2 to 8.6 on fans intermingled with Petrie soils, and 10 percent Absted soils on fans with Heldt soils.

Heldt soils are in the clayey range site, 10 to 14 inch precipitation zone.

Petrie soils are in the Impervious clay range site, 5 to 9 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

301 Orella - Rock Outcrop complex, 3 to 30 percent slopes

This map unit is on upland ridges and hillsides. The largest areas are on the Emigrant Gap N.W. sheet. Slope is 3 to 30 percent. The native vegetation is mainly birdsfoot sagebrush, Gardner's saltbush, threadleaf sedge, and Indian ricegrass. Elevation is 5500 to 6500 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 49 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 40 percent Orella silty clay loam, 3 to 30 percent slopes, and 30 percent Rock Outcrop.

Orella is on ridges and sidehill slopes, intermingled with Rock Outcrop.

The Orella soil is shallow and well drained. It formed in residuum derived dominantly from sodic shale.

The surface layer is light brownish gray silty clay loam 2 inches thick. The underlying layer is light olive brown silty clay 5 inches thick. The lower layer is light brownish gray silty clay 5 inches thick, and rests on very strongly alkaline shale. The soil is very strongly alkaline from 2 to 12 inches. In some areas the surface layer is clay.

Orella soils have a very slow permeability. Available water capacity is low. Effective root depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

Included in this unit is about 10 percent Cadoma soils on sidehill slopes, 10 percent Petrie and Bone soils on alluvial fans, 5 percent Samsil on uplands, and 5 percent Tassel and sandstone outcrop on remnant caps.

Orella soils - dense clay range site, 10 to 14 inch precipitation zone.

Rock Outcrop - no site assigned.

ADVANCE DATA
SUBJECT TO CHANGE

302 Shingle - Tassel - Rock Outcrop complex, 10 to 40 percent slopes

This map unit is on sloping to steep uplifted areas of thin soils and rock outcrop. The largest area of this unit is north of Waltman. Slope is 10 to 40 percent. The native vegetation is mainly threadleaf sedge, bluebunch wheatgrass, and scattered big sagebrush. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 30 percent Shingle loam, 10 to 40 percent slopes, 25 percent Tassel sandy loam, 20 to 40 percent slopes, and 20 percent Rock Outcrop.

Shingle is on steeply sloping areas over siltstone. Tassel is on steeply sloping areas over sandstone. Rock Outcrop is intermingled with the shallow soils.

The Shingle soil is shallow and well drained. It formed in residuum derived dominantly from siltstone.

Shingle soils have a surface layer that is a pale brown, calcareous, moderately alkaline, loam 2 inches thick. The underlying layer is light brownish gray, calcareous, moderately alkaline, loam 4 inches thick. The next layer is a light olive gray, calcareous, strongly alkaline, light clay loam 7 inches thick, and is underlain by soft siltstone at a depth of 13 inches.

Permeability of the Shingle soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe.

The Tassel soil is shallow and well drained. It formed in residuum derived dominantly from sandstone.

Tassel soils have a surface layer that is pale brown calcareous, moderately alkaline sandy loam 3 inches thick. The underlying layer is brown to light olive brown calcareous, moderately alkaline, sandy loam 9 inches thick, and is underlain by soft sandstone at 12 inches.

Permeability of the Tassel soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe.

Rock Outcrop consists of barren exposures of sandstone, siltstone, and shale.

Included in this unit is about 10 percent Kim soils on

colluvial pockets, and short fans adjacent to drainages; 10 percent Thedalund soils on sidehill slopes; and 5 percent shallow sodic soils on areas below shale outcrop. Also included are small areas of Otero soils below sandstone ledges.

The Shingle soils are in the shallow loamy range site, 10 to 14 inch precipitation zone.

The Tassel soils are in the shallow sandy range site, 10 to 14 inch precipitation zone.

Rock Outcrop has no range site assigned.

ADVANCE DATA
SUBJECT TO CHANGE

308 Haterton - Cragosen - Worfman complex, 15 to 60 percent slopes

This map unit is on sloping to steep ridges and hillsides on cedar ridges. Slope is 15 to 60 percent. The native vegetation is mainly cedar bushes, threadleaf sedge, and bluebunch wheatgrass. Elevation is 6500 to 7000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 110 days.

This unit is 25 percent Haterton gravelly sandy loam, 20 percent Cragosen gravelly loam, and 20 percent Worfman loam, 15 to 30 percent slopes.

Haterton is on south facing ridges and slopes, Cragosen is on north and east slopes, Worfman is on north slopes.

The Haterton soil is shallow and well drained. It formed in residuum derived dominantly from sandy shale.

Haterton soils have a surface layer that is brown, moderately alkaline gravelly sandy loam 3 inches thick. The underlying layer is light yellowish brown calcareous, moderately alkaline,clay loam 11 inches thick, and is over soft, sandy, calcareous, shale at 14 inches. In some areas the surface layer is loam and channery loam.

Permeability of the Haterton soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is severe.

The Cragosen soil is shallow and somewhat excessively drained. It formed in residuum and local gravelly alluvium.

Cragosen soils have a surface layer that is a brown, mildly alkaline, gravelly loam 2 inches thick. The next layer is a yellowish brown, calcareous, moderately alkaline, loam about 3 inches thick. The substrata is a pale brown, calcareous, strongly alkaline, very gravelly loam in the upper 4 inches becoming extremely gravelly in the lower 9 inches. This layer is underlain abruptly by an olive, calcareous, sandy shale. In some areas the surface layer is loam.

Permeability of the Cragosen soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is severe.

The Worfman soil is shallow and well drained. It formed in residuum derived dominantly from sandy shale and calcareous sandstone.

Worfman soils have a surface layer that is a grayish brown, mildly alkaline, loam 2 inches thick. The upper subsoil is a brown, mildly alkaline sandy clay loam 4 inches thick. The lower subsoil is a yellowish brown, calcareous, moderately alkaline, sandy clay loam about 6 inches thick. The substratum is yellowish brown, calcareous, strongly alkaline, sandy clay loam 5 inches thick, and is over olive, calcareous, soft sandy shale at a depth of 17 inches.

Permeability of the Worfman soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is severe.

Included in this unit is about 15 percent deep gravelly soils on footslopes and in drainages, 15 percent shallow gravelly soils similar to Cragosen, on dry ridges and slopes facing south, and 5 percent shale outcrop.

Haterton soils are in the shallow loamy range site, 5 to 9 inch precipitation zone.

Cragosen soils are in the shallow loamy range site, 10 to 14 inch precipitation zone.

Worfman soils are in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

311 Mudray - Bributte - Birdsley complex, 6 to 30 percent

This map unit is on sloping uplands, upland benches, and low ridges, in the Arminto area. Slope is 6 to 30 percent. The native vegetation is mainly birdsfoot sagebrush and bottlebrush squirreltail. Elevation is 5800 to 6200 feet.

The average annual precipitation is about 5 to 9 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 110 to 120 days.

This unit is 35 percent Mudray silty clay loam, 6 to 30 percent slopes, 25 percent Bributte silty clay loam, 6 to 30 percent slopes, and 20 percent Birdsley loam, 6 to 30 percent slopes.

The soils of this complex occur in an intermingled pattern.

The Mudray soil is well drained and shallow. It formed in residuum derived dominantly from shale.

The surface layer is very pale brown, calcareous, moderately alkaline, silty clay loam 1 1/2 inches thick. The subsoil is pale brown, very strongly alkaline, calcareous, clay 10 1/2 inches thick. The underlying layer is light brownish gray, calcareous,very strongly alkaline, silty clay extending to shale at 18 inches. In some areas the surface layer is silty clay, clay.

Permeability of the Mudray soil is very slow. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate to severe.

The Bributte soil is well to somewhat excessively drained and shallow. It formed in residuum derived dominantly from strongly alkaline shale.

The surface layer is light brownish gray, calcareous, very strongly alkaline, silty clay loam 1 inch thick. The underlying layer is light yellowish brown, calcareous, very strongly alkaline, silty clay, extending to shale at 17 inches.

Permeability of the Bributte soil is very slow. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate to severe.

The Birdsley soil is well to somewhat excessively drained and shallow. It formed in residuum derived dominantly from sandy, alkaline shale.

The surface layer is light gray, calcareous, very strongly alkaline, loam 1 inch thick. The underlying layer is light brownish gray, very strongly alkaline, calcareous, loam that

extends to soft alkaline sandy shale at 18 inches. In some areas the surface layer is clay loam.

Permeability of the Birdsley soil is very slow. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to severe.

Included in this unit is about 10 percent moderately deep, very strongly alkaline, soils on lower slopes and 10 percent shale outcrop on slope breaks, usually at the upper end of the unit.

Mudray, Bributte and Birdsley soils are in saline upland range site, 5 to 9 inch precipitation zone.

SUBJECT TO CHANGE

313 Haverson - Glenberg complex, 0 to 3 percent

This map unit is on nearly level floodplains and low river terraces. This unit is on narrow flood plains, primarily in the Hiland area. Slope is 0 to 3 percent. The native vegetation is mainly big sagebrush, western wheatgrass, sandburg bluegrass, threadleaf sedge, and cactus. Elevation is 5700 to 6000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 49 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 55 percent Haverson clay loam, 0 to 3 percent, and 35 percent Glenburg sandy loam, 0 to 3 percent slopes.

Haverson (0-3%) is on floodplains and low terraces, Glenberg (0-3%) is on floodplains and low terraces.

The Haverson soil is deep and well drained. It formed in alluvium derived dominantly from mixed sources.

The surface layer is light brownish gray loam 3 inches thick. The underlying layer is light yellowish brown silt loam 4 inches thick. A 5 inch band of light brownish gray very fine sandy loam is below the underlying layer, and overlays 48 inches of light brownish gray loam, stratified with very fine sandy loam and silt loam. In some areas the surface layer is loamy sands and/or sandy loams. The soil is calcareous and moderately alkaline throughout.

Permeability of the Haverson soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

The Glenberg soil is deep and well drained. It formed in alluvium derived dominantly from mixed sources.

Glenberg has a light brownish gray, calcareous, moderately alkaline, sandy loam surface 6 inches thick. The substratum is a light brownish gray, calcareous, moderately alkaline, stratified sandy loam more than 54 inches thick. In some areas the surface layer is a loamy sand.

Permeability of the Glenberg soil is rapid. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Included in this unit is about 10 percent deep sand on the nearly level stream bottom. Along some of the major drainages, on the Alcova Alcove S.E., and Horse Peak Sheets are areas of saline lowland vegetation intermingled with areas of loamy site vegetation.

Haverson and Glenberg soils are in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

316 Rentsac - Rock Outcrop complex, steep

This map unit is on mountain slopes. It occurs along the south flank of the Big Horn Mountains, and on other uplifted areas. Slope is 10 to 50 percent. The native vegetation is mainly big sagebrush, low sagebrush, needleandthread, threadleaf sedge, and some juniper. Elevation is 5600 to 6600 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 100 days.

This unit is 55 percent Rentsac and 30 percent Rock Outcrop. Also in this unit is about 15 percent other soils similar to Rentsac that are moderately deep.

Rentsac is on areas with a soil mantle and Rock Outcrop is on areas of exposed bedrock.

The Rentsac soil is shallow, gravelly and well drained. It formed in residuum and colluvium derived dominantly from granitic rocks.

Rentsac has a brown gravelly loam surface about 4 inches thick. The 4 to 6 inch depth is light brownish gray very gravelly loam. Below about 6 inches it is pinkish gray very gravelly loam with lime threads and splotches to 15 inches underlain by granitic bedrock. In some areas the surface layer is cobbly. The soil is calcareous and moderately alkaline throughout.

Permeability of the Rentsac soil is moderately rapid or rapid. Available water capacity is low. Effective rooting depth is 4 to 20 inches. Runoff is medium, and the hazard of water erosion is slight to moderate.

The Rock Outcrop exposed areas of bedrock and may be fractured in places.

Included in this unit is about 10 percent other soils similar to Rentsac that are 20 to 40 inches over bedrock and have better sagebrush growth and 5 percent very deep soils in drainageways.

Rentsac is very shallow range site, to inch precipitation zone.

Rock Outcrop is not a range site.

ADVANCE DATA
SUBJECT TO CHANGE

317 Thermopolis - Rock Outcrop complex, 30 to 60 percent slopes

This map unit is on steeply sloping uplands of the redbeds along the south end of the Big Horn Mountains, and along the Rattlesnake Mountains. Slope is 30 to 60 percent. The native vegetation is mainly threadleaf sedge and bluebunch wheatgrass. Elevation is 6500 to 7000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 40 percent Thermopolis loam, 30 to 60 percent slopes, and 30 percent Rock Outcrop.

The Thermopolis soils and Rock Outcrop occur in a complex pattern.

The Thermopolis soil is shallow and well drained. It formed in residuum derived dominantly from redbed formations.

Thermopolis soils have a surface layer that is a yellowish red, calcareous, moderately alkaline, loam 4 inches thick. The underlying layer is red, calcareous, moderately alkaline, loam 10 inches thick, and is underlain by red, soft, calcareous siltstone at a depth of 14 inches. In some areas the surface layer is silt loam.

Permeability of the Thermopolis soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is severe.

Included in this unit is about 15 percent Sinkson soils on colluvial slopes and narrow valleys, 10 percent stony soils on outwash terraces, and 5 percent Rentsac soils along the contact with hard sandstone beds.

On the Crimson Dawn and Otter Creek sheets, shallow soils with thin subsoils are inclusions. On the Crimson Dawn sheet, some areas of this unit have about 20 percent Sinkson soils. On the Sheep Creek sheet, areas along the west side of Corral Creek, and in the SE 1/4, of Section 20, T. 30N., R. 79W., have been assigned the Shallow Breaks range site.

Thermopolis soil is in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

ADVANCE DATA
SUBJECT TO CHANGE

318 Sinkson - Thermopolis complex, 6 to 30 percent slopes

This map unit is on dissected alluvial fans and upland ridges, along the south flank of the Big Horn Mountains and other Redbeds areas. Slope is 6 to 30 percent. The native vegetation is mainly needleandthread grass, threadleaf sedge, rabbit brush, and big sagebrush. Elevation is 6400 to 6800 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 40 percent Sinkson loam, 6 to 15 percent slopes, and 25 percent Thermopolis loam, 10 to 30 percent slopes. Also in this unit is about 15 percent Rock Outcrop.

Sinkson is on dissected fans and valleys, Thermopolis is on upland ridges and steeper hillsides.

The Sinkson soil is deep and well drained. It formed in slope wash alluvium derived dominantly from redbed formations.

Sinkson soils have a surface layer that is a reddish brown calcareous, moderately alkaline loam 7 inches thick. The underlying layer is light reddish brown, calcareous, strongly alkaline, loam extending to depths of at least 60 inches. In some areas the surface layer is silt loam.

Permeability of the Sinkson soil is moderate. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is severe.

The Thermopolis soil is shallow and well drained. It formed in residuum derived dominantly from redbed formations.

Thermopolis soils have a surface layer that is a red calcareous, moderately alkaline, loam 5 inches thick. The underlying layer is red, calcareous, strongly alkaline, loam to 16 inches, and is over red siltstone. In some areas the surface layer is silt loam and very fine sandy loam.

Permeability of the Thermopolis soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe.

Rock Outcrop consists of reddish barren siltstone and fine grained sandstone.

Included in this unit is about 10 percent stony soils on outwash benches, 5 percent Rentzac soils on hard ledges of sandstone, and 5 percent deep saline soils in draws.

The Sinkson soil is in the loamy range site, 10 to 14 inch

precipitation zone.

The Thermopolis soil is in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

319 Rentsac - Blazon complex, 15 to 40 percent slopes

This map unit is on steeply uplifted upland ridges along the south flank of the Big Horn Mountains, and along other uplifted areas. Slope is 15 to 40 percent. The native vegetation is mainly threadleaf sedge, bluebunch wheatgrass, rabbitbrush, and scattered cedar trees. Elevation is 6600 to 7200 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 50 percent Rentsac very gravelly loam 15 to 40 percent slopes and 25 percent Blazon gravelly loam, 15 to 40 percent slopes.

Rentsac soil is on dip slopes, slabby sandstone uplands, and Blazon is on steep ridges and hillsides over soft bedrocks.

The Rentsac soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from hard slabby sandstone.

Rentsac soils have a surface layer that is a pale brown, calcareous, moderately alkaline, channery loam 2 inches thick. The underlying layer is a light yellowish brown, calcareous, moderately alkaline, very channery loam about 9 inches thick over hard, fractured, calcareous, sandstone at a depth of 11 inches. In some areas the surface layer is paved with flat sandstone fragments.

Permeability of the Rentsac soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate.

The Blazon soil is shallow and well to somewhat excessively drained. It formed in residuum derived dominantly from siltstone and silty shale.

Blazon soils have a surface layer that is a brown, calcareous, moderately alkaline, gravelly loam 3 inches thick, with about 40 percent of the surface stones and boulders. The underlying layer is a pale brown, calcareous, moderately alkaline, gravelly loam 13 inches thick, and is over soft, calcareous siltstone at 16 inches.

Permeability of the Blazon soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is moderate to rapid, and the hazard of water erosion is moderate to high.

Included in this unit is about 15 percent rock outcrop on ledges and on very steep ridges, and 10 percent shallow clayey soils on hillsides.

Rentsac soils are in the very shallow range site, 10 to 14 inch precipitation zone.

Blazon soils are in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

326 Crownest - Blazon complex, 10 to 40 percent slopes

This map unit is on steeply sloping dip slope ridges, along the slope of the Big Horn Mountains, Bessemer Mountain, and on other steeply dipping beds. Slope is 10 to 40 percent. The native vegetation is mainly black sagebrush, big sagebrush, bluebunch wheatgrass, and threadleaf sedge. Elevation is 6500 to 6800 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 90 days.

This unit is 50 percent Crownest sandy loam thin solum 20 to 40 percent slopes, and 25 percent Blazon loam, 10 to 30 percent slopes.

Crownest thin solum is on steeply, dipping single slope uplands. Blazon is on ridges at the base of dip slopes.

The Crownest thin solum soil is very shallow and well drained. It formed in residuum derived dominantly from hard noncalcareous sandstone.

Crownest soils have a surface layer that is a brown, neutral sandy loam 2 inches thick. The underlying layer is brown, mildly alkaline, sandy loam 5 inches thick, and is over hard sandstone. The surface soil is covered with hard sandstone fragments.

Permeability of the Crownest variant soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 5 to 10 inches. Runoff is rapid and the hazard of water erosion is very severe.

The Blazon soil is shallow and well drained. It formed in residuum derived dominantly from sandy shale and siltstone.

Blazon soils have a surface layer that is brown, calcareous, moderately alkaline, loam 2 inches thick. The underlying layer is yellowish brown grading to light yellowish brown, calcareous, moderately alkaline, loam 15 inches thick, and is over soft sandy shale at 17 inches. In some areas the surface layer is channery loam.

Permeability of the Blazon soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is moderate to rapid, and the hazard of water erosion is severe.

Included in this unit is about 10 percent rock outcrop on sandstone ledges intermingled with Crownest thin solum soils, 10 percent Worfman soils on low ridges, and 5 percent moderately deep and deep sandy loam soils in drainages and concave pockets.

Crownest, thin solum, is in the very shallow range site, 10 to 14 inch precipitation zone.

Blazon is in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

328 **Neldore - Moyerson - Rock Outcrop complex, 10 to 40 percent slopes**

This map unit is on sloping to steep hillsides and ridges over acid and calcareous shales scattered throughout the survey area. Slope is 10 to 40 percent. The native vegetation is mainly bluebunch wheatgrass, big sagebrush, western wheatgrass, and scattered pine trees. Elevation is 6600 to 7000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 30 percent Neldore clay loam, 10 to 30 percent, 25 percent Moyerson silty clay, 10 to 30 percent, and 20 percent Rock Outcrop, 20 to 40 percent slopes.

Neldore is on hillsides underlain by acid shale. Moyerson is on hillsides over calcareous shales. These soils occur in a banded pattern along the flank of the Big Horn Mountains and Rattlesnake Mountains.

The Neldore soil is shallow, somewhat excessively drained. It formed in residuum derived dominantly from acid and noncalcareous platy shale.

Neldore soils have a surface layer that is a dark grayish brown, neutral clay loam about 1 inch thick. The underlying layer is grayish brown to light brownish gray, neutral, silty clay 13 inches thick and is over granular noncalcareous shale at 14 inches. In some areas the surface layer is channery clay loam.

Permeability of the Neldore soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is severe.

The Moyerson soil is shallow and well drained. It formed in residuum derived dominantly from calcareous, clay shales.

Moyerson soils have a surface layer that is a grayish brown, calcareous, moderately alkaline, silty clay 3 inches thick. The underlying layer is brown, calcareous, moderately alkaline, clay 11 inches thick, and is over soft, calcareous shale. In some areas the surface layer is clay loam.

Permeability of the Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe.

Rock Outcrop consists of barren exposures of granular acid shales and calcareous shales.

Included in this unit is about 10 percent deep channery loam and clay loam soils on colluvial slopes and adjacent to draws, 5

percent Crownest soils on ledges of hard sandstone, and 5 percent Blazon soils on ridges of soft siltstone. On the northface of Cyclone Ridge (Ervay Basin area) these soils are receiving additional moisture from snowpack, and have a thicker stand of big sage and western wheatgrass, plus some Idaho fescue. In one area of the east side of Pine Mountain, the deep channery clay loam soils make up 15 to 20 percent of the mapped area.

Neldore and Moyerson are in the shallow clayey range site, 10 to 14 inch precipitation zone.

Rock Outcrop has no range site assigned.

ADVANCE DATA
SUBJECT TO CHANGE

332 Brownsto - Lupinto complex, 6 to 40 percent slopes

This map unit is on sloping to steep dissected ridges and hillsides that are remnants of high gravelly terraces. Large areas of this unit occur along the Fremont County line, on the Ervay Basin S.W. sheet. Slope is 6 to 40 percent. The native vegetation is mainly black sagebrush and bluebunch wheatgrass. Elevation is 6500 to 7000 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 50 percent Brownsto gravelly loam, 15 to 40 percent slopes and 25 percent Lupinto gravelly loam, 6 to 20 percent slopes.

Brownsto is on sidehill slopes and steeper ridges. Lupinto is on lesser sloping sidehills and rounded crests.

The Brownsto soil is deep and well drained. It formed in very calcareous, gravelly outwash. Typically the Brownsto soil has a surface layer that is yellowish brown, mildly alkaline, gravelly loam about 4 inches thick. The upper underlying layer is light yellowish brown calcareous, moderately alkaline, gravelly loam 11 inches thick. The lower underlying layer is white calcareous, strongly alkaline, very gravelly loam 27 inches thick, and is underlain by a very pale brown, calcareous, strongly alkaline, very gravelly sand extending to depths of at least 60 inches.

Permeability of the Brownsto soil is moderate. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate to severe.

The Lupinto soil is deep and well drained. It formed in gravelly and loamy mixed outwash.

Typically, the Lupinto soils have a surface layer that is a yellowish brown, mildly alkaline, gravelly loam 3 inches thick. The subsoil is a yellowish brown, mildly alkaline, clay loam 8 inches thick. The substratum is pale yellow, calcareous, moderately alkaline, very gravelly loam 30 inches thick, and grades to very pale brown, calcareous, moderately alkaline, very gravelly sand loam that extends to depths of at least 60 inches. In some areas the surface layer is very gravelly loam.

Permeability of the Lupinto soil is moderate. Available water capacity is moderately high. Effective rooting depth is 60 inches or more. Runoff is medium to rapid, and the hazard of water erosion is moderate to severe.

Included in this unit is about 10 percent Cragosen soils on ridge crests and intermingled on steep sidehills, 10 percent

deep very gravelly and cobbly soils on hillsides (noncalcareous profiles), 5 percent Blazon soils on ridge crests. In some areas the map unit extends into elevations of 6200 to 6400 feet and has temperatures warmer than typical. On the Bear Spring sheet a few areas have deep loamy soils in snow pockets. The terrace escarpment along Beaver Rim has slopes that exceed 40 percent.

Brownsto soil is in the shallow loamy range site, 10 to 14 inch precipitation zone.

Lupinto soil is in the shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

337 Sunup - Rock Outcrop - Kim complex, 10 to 40 percent slopes

This map unit is on steeply sloping sidehills dissected by many drainages, primarily in the Powder River, Oil Mountain area. Slope is 10 to 40 percent. The native vegetation is mainly threadleaf sedge, big sagebrush, prairie junegrass, needleandthread grass, western wheatgrass, and ponderosa pine trees. Elevation is 6100 to 6600 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 110 days.

This unit is 30 percent Sunup very gravelly loam, 20 to 40 percent slopes, 25 percent Rock Outcrop, and 20 percent Kim loam, 10 to 20 percent slopes.

Sunup is on hillsides, Rock Outcrop is on ledges and very steep sidehills, and Kim is on colluvial pockets, sidehills, and fills in narrow drainages.

The Sunup soil is shallow and well to somewhat excessively drained. It formed in residuum derived dominantly from hard calcareous sandstone.

Sunup soils have a surface layer that is a yellowish brown calcareous, moderately alkaline, very gravelly loam 4 inches thick. The substratum is light yellowish brown calcareous, moderately alkaline, very gravelly loam 9 inches thick. The soil is underlain by hard sandstone bedrock at a depth of 13 inches. In some areas the surface layer is gravelly loam.

Permeability of the Sunup soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is severe.

Rock Outcrop consists of sandstone ledges, very steep, shale (calcareous and noncalcareous) and gravel conglomerate.

The Kim soil is deep and well drained. It formed in alluvium derived dominantly from shale and sandstone.

Kim soils have a surface layer that is light brownish gray, calcareous, moderately alkaline, loam 3 inches thick. The upper underlying layer is light brownish gray calcareous, strongly alkaline loam 6 inches thick. The lower underlying layer is pale olive, calcareous, strongly to moderately alkaline, loam to depths of at least 60 inches.

Permeability of the Kim soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

Included in this unit is about 10 percent alluvial soils in flat bottom drainages, 5 percent Fort Collins on smooth

footslopes and short fans, 5 percent Shingle on ridges, and 5 percent shallow reddish soils similar to Spearfish on sidehills.

The Sunup soil is in the shallow loamy range site, 10 to 14 inch precipitation zone.

Rock Outcrop is not assigned a range site.

Kim soil is in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

388 **Forelle loam, 2 to 9 percent slopes**

This Forelle soil is on terraces and fans and in some swales in uplands. This unit is scattered throughout the southern part of the survey area. Slope is 2 to 9 percent. It formed in fan alluvium derived dominantly from mixed sedimentary rocks. The native vegetation is mainly big sagebrush, threadleaf sedge, needleandthread, prairie junegrass and poa. Elevation is 6500 to 7650 feet.

The average annual precipitation is about 10 to 14 inches, the average air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

Forelle soils are deep and well drained. They formed in alluvium derived locally from sedimentary rock.

Forelle has a grayish brown, moderately alkaline, loam surface 5 inches thick. The subsoil is 15 inches thick. The upper 5 inches is grayish brown, moderately alkaline, loam and the lower 10 inches is brown clay loam. The substratum is light gray calcareous, moderately alkaline, loam from 20 to 60 inches. In some areas the surface layer is sandy loam or fine sandy loam.

Included in this unit, in the areas south and west of alcova, are inclusions of Bosler and Alcova intermixed. Where mapped in other areas inclusions of Diamondville, Delphill and Patent are intermixed. Also Blazon occurs on some terrace breaks. Pinelli may be in areas adjacent to map units of Pinelli and are intermixed. All of these inclusions except Blazon have similar vegetation. Areas of Blazon have shorter big sagebrush and more low sagebrush. Included areas make up about 20 percent of the total acreages.

Permeability of this Forelle soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight to moderate.

Forelle is in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

389 Blazon - Diamondville complex, 3 to 20 percent slopes

This map unit is on rolling uplands scattered throughout the southern part of the survey area. Slope is 3 to 20 percent. The native vegetation is mainly big sagebrush, low sagebrush, threadleaf sedge, prairie junegrass, bluegrass, and western wheatgrass. Elevation is 6800 to 7400 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 90 days.

This unit is 40 percent Blazon loam, 6 to 20 percent slopes, and 40 percent Diamondville loam, 6 to 15 percent slopes.

Blazon loam, 6 to 20 percent, is on ridge tops and sideslopes, and Diamondville loam, 6 to 15 percent, is on lower parts of sideslopes.

The Blazon soil is shallow over paralithic materials and well drained. It formed in residuum derived dominantly from soft shale, sandstone and loamstone.

Blazon has a pale brown calcareous, moderately alkaline, loam surface 3 inches thick. The subsurface is very pale brown calcareous, moderately alkaline, loam 11 inches thick. This rests on loamstone or soft sandstone bedrock. In some areas the surface layer is sandy loam and depth to paralithic contact is less than 10 inches.

Permeability of the Blazon soil is moderate to slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

Diamondville soils are moderately deep and well drained. They formed in material from calcareous loamstone and sandstone.

Diamondville has a dark grayish brown, moderately alkaline, loam surface 3 inches thick. The subsoil is brown mildly alkaline, clay loam 11 inches thick. The substratum is pink calcareous, moderately alkaline, loam 14 inches thick. This rests on loamstone bedrock. In some areas the surface layer is sandy loam.

Permeability of the Diamondville soil is moderate. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is slight to moderate.

Included in this unit is about 5 percent Forelle in swales, 5 percent Delphill on sideslopes, 5 percent Rentsac and Cragosen on some ridge tops, and 5 percent Pinelli in some concave areas. On the Freeland and Crimson Dawn sheets, the areas of this map unit have about 15 percent Rentsac soils.

Blazon is in the shallow loamy range site, 10 to 14 inch precipitation zone.

Diamondville is in the loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

402 Thedalund - Shingle - Kim complex, 6 to 40 percent slopes

This map unit is on ridges, sideslopes and alluvial fans, in the central and southern part of the area. Slope is 6 to 40 percent. The native vegetation is mainly western wheatgrass, threadleaf sedge, big sagebrush, needleandthread, and prairie junegrass. Elevation is 5100 to 6500 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 120 days.

This unit is 30 percent Thedalund light clay loam, 10 to 30 percent slopes, 25 percent Shingle loam, 6 to 40 percent slopes, and 20 percent Kim clay loam, 6 to 20 percent slopes. Also in this unit is about 25 percent other soils.

Thedalund, 10 to 30 percent slope, is on upland sideslopes and hillsides. Shingle, 6 to 40 percent slope is on ridges and upper sideslopes, and Kim, 6 to 20 percent slopes, is on upland sideslopes and alluvial fans.

The Thedalund soil is moderately deep and well drained. It formed in alluvium and residuum derived dominantly from soft shale, sandstone and loamstone.

Thedalund has a light brownish gray, calcareous, mildly alkaline light clay loam surface 3 inches thick. It has a light brownish gray to light gray, calcareous, moderately to strongly alkaline clay loam subsurface 24 inches thick underlain at 27 inches by soft sandy, silty stratified shale. In some areas the surface layer is sandy loam or loam.

Permeability of the Thedalund soil is moderate. Available water capacity is medium. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is moderate.

The Shingle soil is shallow and well drained. It formed in residuum derived dominantly from loamstone.

The Shingle soil has a pale brown loam surface layer 2 inches thick. The underlying layer is pale brown loam 15 inches thick, and rests on soft loamstone at 17 inches. In some areas the surface layer is light clay loam. The soil is calcareous and moderately alkaline throughout.

Permeability of the Shingle soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

The Kim soil is very deep and well drained. It formed in alluvium derived dominantly from sedimentary rocks. Kim has a grayish brown clay loam surface layer 5 inches thick. The

substratum is a grayish brown and light brownish gray clay loam to 60 inches or more. In some areas the surface layer is loam. The soil is calcareous and moderately alkaline throughout.

Permeability of the Kim soil is moderate. Available water capacity is good. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate.

On the Alcova S.E. sheet, some areas contain a higher percentage of Shingle soils than other delineations of the map unit.

On Twin Buttes sheet, between the Bates Hole Stock Trail and Highway 487, the areas of 402 include deep gravelly soils with calcic horizons. These are on dissected terrace remnants, and are shallow sandy range site.

Included in this unit is about 10 percent soils similar to Thedalund and Kim that have argillic horizons on similar landscapes, 5 percent soils similar to Shingle that are over hard sandstone on similar landscapes, 5 percent Rock Outcrop on areas of exposed bedrock, and 5 percent shallow soils over shale.

Thedalund is in loamy range site, 10 to 14 inch precipitation zone.

Single is in shallow loamy range site, 10 to 14 inch precipitation zone.

Kim is in loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

425 Yampa loam, 0 to 8 percent slopes

This fine loamy soil is in wet swales and drains primarily in the southern part of the survey area. Slope is 0 to 8 percent. It formed in alluvium derived from various rock material. The native vegetation is mainly mountain meadow sedges, rushes, and water loving plants. Elevation is 6300 to 7800 feet. The average annual precipitation is about 10 to 14 inches, except on photos T-14 & 15 and U-14 & 15 where it is probably 15 to 19 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 90 days.

Yampa has a black, mildly alkaline loam surface layer 7 inches thick. The subsurface is black, mildly alkaline loam 15 inches thick with moderate blocky structure in the upper part. The substrata is gleyed olive gray, mildly alkaline silty clay loam 14 inches thick. This rests on sandy gravel with free water at 36 inches.

The Yampa soil on photos T-14 & 15 and U-15 is found in wet grassy meadow areas that finger up mountain sideslopes between granitic rock soils. Elsewhere it is in wet drains in rolling uplands and on terraces. In some areas the surface layer is clay loam or fine sandy loam.

Included in this unit are small areas of Ulric and Relsob on slightly higher positions in the unit on photos T-14 & 15 and U-15. Elsewhere in the survey area, Pinelli, Forelle, Bosler and Kim on the ends of small fans and small terraces, and alluvial soils on low terraces adjacent to drains. Included areas make up about 20 percent of the total acreage.

Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

Yampa is in the subirrigated range site, 15 to 19 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

435 Embry - Vona - Tassel complex, 5 to 20 percent slopes

This map unit is on rolling upland, ridges, footslopes and fans. This unit occurs mainly on the Poison Spider and Benton Basin N.E. sheets. Slope is 5 to 20 percent. The native vegetation is mainly big sagebrush, low sagebrush, needleandthread, threadleaf sedge, western wheatgrass, and cactus. Elevation is 6000 to 6500 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 48 degrees F., and the average frost-free season is 100 to 110 days.

This unit is 40 percent Embry sandy loam, 5 to 12 percent slopes, 25 percent Vona loamy sand, 5 to 12 percent slopes, and 20 percent Tassel gravely sandy loam, 10 to 20 percent slopes. The soils are taxadjuncts. They are noncalcareous.

Embry is on sidehill slopes and footslopes, Vona is on fans and footslopes, and Tassel is on ridges and steeper hillsides.

The Embry soil is deep and well drained. It formed in slope wash alluvium derived dominantly from sandstone uplands.

Embry soils have a yellowish brown, neutral sandy loam surface layer 3 inches thick. The upper underlying layer is brown, neutral sandy loam 6 inches thick. The lower layer is yellowish brown, mildly alkaline sandy loam to 60 inches or more. In some areas the surface layer is loamy sand.

Permeability of the Embry soil is moderately rapid. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is moderate.

The Vona soil is deep and well drained. It formed in slope wash alluvium derived dominantly from sandstone uplands.

Vona has a brown, neutral loamy sand surface layer 6 inches thick. The subsoil is yellowish brown, neutral sandy loam 12 inches thick. The substratum is brownish yellow, mildly alkaline loamy sand to 60 inches or more. In some areas the surface layer is sandy loam. This soil is a taxadjunct to the Vona Series. It is calcareous throughout.

Permeability of the Vona soil is moderately rapid. Available water capacity is medium. Effective rooting depth is 60 inches or more. Runoff is slight, and the hazard of water erosion is moderate.

The Tassel soil is shallow and well drained. It formed in residuum derived dominantly from sandstone.

Tassel has a pale brown cobbly sandy loam surface layer 3 inches thick. The underlying layer is pale brown sandy loam 8

inches thick, and rests on soft sandstone at 11 inches. In some areas the surface layer is cobbly sandy loam.

Permeability of the Tassel soil is moderately rapid. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

Included in this unit is about 10 percent Olney sandy loam on lower hillsides and fans and 5 percent Cragosen soils on ridges.

Embry and Vona soils are in the sandy range site, 10 to 14 inch precipitation zone.

Tassel is in shallow sandy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

458 Rentsac - Thermopolis - Rock Outcrop complex, steep

This map unit is on bedrock dip slopes, scarp slopes, sideslopes and fans, mainly on the Freeland and Crimson Dawn sheets. Slope is 10 to 30 percent. The native vegetation is mainly juniper, big sagebrush, needleandthread, prairie junegrass and low sagebrush. Elevation is 6500 to 7500 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F., and the average frost-free season is 80 to 90 days.

This unit is 50 percent Rentsac gravelly fine sandy loam, 10 to 30 percent slopes, 20 percent Thermopolis channery loam, 10 to 30 percent slopes, and 20 percent Rock Outcrop.

Rentsac (10-30 percent slopes) is on dip slopes of bedrock uplands, Thermopolis (10-30 percent slopes) is on sideslopes, and Rock Outcrop is on scarp slopes and dip slopes.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone.

Rentsac has a dark grayish brown, moderately alkaline gravelly fine sandy loam surface 2 inches thick. The underlying material is grayish brown, calcareous, moderately alkaline very gravelly sandy loam 6 inches thick over sandstone. In some areas the surface layer is channery loam.

Permeability of the Rentsac soil is moderately rapid and rapid. Available water capacity is low. Effective rooting depth is 4 to 20 inches. Runoff is slow to rapid, and the hazard of water erosion is moderate.

The Thermopolis soil is shallow and well drained. It formed in residuum derived dominantly from sandstone.

Thermopolis has a brown channery loam surface 5 inches thick, underlain by a brown loam 5 inches thick over reddish brown loam. Below about 16 inches is fine grained disintegrating paralithic sandstone. The soil is calcareous and mildly to moderately alkaline throughout. In some areas the surface layer is loam and sandy.

Permeability of the Thermopolis soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

The Rock Outcrop is areas of exposed bedrock.

Included in this unit is about 5 percent soils similar to Rentsac and Thermopolis but deeper than 20 inches to bedrock or paralithic materials, and 5 percent deep loamy soils in concave areas.

Rentsac is shallow range site, 10 to 14 inch precipitation zone.

Thermopolis is shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

475 Ulric - Grail complex, 2 to 15 percent slopes

This map unit is on rolling upland plateaus in the southeast part of the survey area. Slope is 2 to 15 percent. The native vegetation is mainly big sagebrush, needleandthread, prairie junegrass, and poa. Elevation is 7000 to 7600 feet.

The average annual precipitation is about 15 to 19 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 80 to 90 days.

This unit is 5 percent Ulric loam, 6 to 15 percent slopes, 30 percent Grail loam, 2 to 6 percent slopes.

Ulric is on broad rounded ridges and Grail is on concave areas and lee sideslopes.

The Ulric soil is very deep, fine textured and well drained. It formed in alluvium derived dominantly from sedimentary and granitic rocks.

Ulric has a brown, mildly alkaline loam surface 3 inches thick. The upper subsoil is brown, mildly alkaline clay loam 6 inches thick. The lower subsoil is brown and pale brown, mildly alkaline silty clay 13 inches thick. The substratum is very pale brown, calcareous, moderately alkaline silt loam to 60 inches or more. In some areas the surface layer is fine sandy loam.

Permeability of the Ulric soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight.

The Grail soil is very deep, fine textured and well drained. It formed in alluvium derived dominantly from sedimentary and granitic rocks.

Grail soil has a grayish brown, mildly alkaline, silt loam surface layer about 12 inches thick. The upper subsoil is a brown, mildly alkaline, silty clay about 17 inches thick. The lower subsoil is a pale brown, moderately alkaline, silty clay loam about 10 inches thick. The substratum is a light gray, calcareous, moderately alkaline, silt loam to depths of more than 60 inches. In some areas, the surface layer is a fine sandy loam.

Permeability of the Grail soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight.

Included in this unit is about 10 percent Pinelli and Pinelli Variant intermixed on the landscape, 3 percent sandy soils on small escarpments and 2 percent wet dark colored soils in swales along drainages. In the Ice Cave area, soils similar to

Pinelli and Stunner occur on low ridges in this map unit. The ridges interfinger with the Ulric and Grail soils, and make up 15 to 20 percent of mapped areas.

Ulric is in loamy range site, 15 to 19 inch precipitation zone.

Grail is in loamy range site, 15 to 19 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

489 Rock River - Worfman complex, rolling

This map unit is on rolling alluvial uplands. Slopes is 2 to 15 percent. The native vegetation is mainly big sagebrush, low sagebrush, threadleaf sedge, needleandthread, prairie junegrass and poa. Elevation is 6200 to 6800 feet.

The average annual precipitation is about 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F., and the average frost-free season is 90 to 100 days.

This unit is 55 percent Rock River sandy loam, 2 to 15 percent slopes, and 25 percent Worfman sandy loam, 6 to 15 percent slopes.

Rock River is on terraces and sideslopes, Worfman is on terrace breaks and upper sideslopes.

The Rock River soil is very deep and well drained. It formed in alluvium derived dominantly from granitic and sedimentary rocks.

The Rock River soil has a pale brown, mildly alkaline sandy loam surface 4 inches thick. The subsoil is brown, mildly alkaline sandy clay loam 14 inches thick. The upper substratum is pale brown, mildly alkaline sandy loam underlain at about 30 inches by very pale brown, calcareous, moderately alkaline sandy loam to 60 inches or more. In some areas the surface layer is loam.

Permeability of the Rock River soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium to rapid, and the hazard of water erosion is moderate.

The Worfman soil is shallow and well drained. It formed in residuum derived dominantly from soft sandstone and loamstone.

Worfman is grayish brown, neutral sandy loam 2 inches thick. The subsoil brown, neutral sandy clay loam 5 inches thick. The substratum is pale brown, neutral sandy loam underlain at 12 inches by paralithic materials. In some areas the surface layer is loam. This soil is a taxadjunct to the Worfman series. The solum is less than 10 inches thick.

Permeability of the Worfman soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is moderate.

Included in this unit is about 10 percent soils similar to Worfman but 20 to 40 inches deep, intermingled with Rock River lower sideslopes, 5 percent soils similar to Ryan Park intermingled on sideslopes with Rock River, 3 percent deep loamy soils in drainages and 2 percent Rock Outcrop.

Rock River is sandy range site, 10 to 14 inch precipitation zone.

Worfman is shallow loamy range site, 10 to 14 inch precipitation zone.

ADVANCE DATA
SUBJECT TO CHANGE

600--Cadoma Variant-Keyner complex, 2 to 12 percent slopes. This map unit is on undulating shale uplands. The native vegetation is mainly short and mid grasses. Elevation is 5,700 to 6,100 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 47 to 49 degrees F, and the average frost-free period is 110 to 130 days.

This unit is 50 percent Cadoma Variant very fine sandy loam, 2 to 12 percent slopes, and 40 percent Keyner sandy clay loam, 2 to 12 percent slopes. The Cadoma Variant soil is on convex slopes and the Keyner soil is on concave slopes.

Included in this unit is about 5 percent Orella clay loam on ridges, about 5 percent Arvada clay loam on concave slopes intermixed with the Keyner soils, and small areas of Rock outcrop scattered throughout the unit.

The Cadoma Variant soil is moderately deep and well drained. It formed in alluvium and residuum derived dominantly from very strongly alkaline sandy shale. Typically, the surface layer is pale brown very fine sandy loam about 4 inches thick. The upper 3 inches of the subsoil is yellowish brown sandy clay loam. The lower 19 inches is very strongly alkaline light brownish gray clay loam. The substratum is very strongly alkaline grayish brown clay loam about 5 inches thick over very strongly alkaline, grayish brown, soft laminar shale at about 26 inches.

Permeability of the Cadoma Variant soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is severe.

The Keyner soil is deep and well drained. It formed in alluvium derived dominantly from very strongly alkaline sandy shale. Typically, the surface layer is grayish brown sandy clay loam about 2 inches thick. The upper 8 inches of the subsoil is grayish brown clay loam. The lower 8 inches is very strongly alkaline light grayish brown clay loam. The substratum to a depth of 60 inches or more is very strongly alkaline light grayish brown clay loam. In some areas the surface layer is sandy loam.

Permeability of the Keyner soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Cadoma Variant soil is mainly rhizomatous wheatgrass, needleandthread grass, Indian ricegrass, and Cusick bluegrass. The present vegetation in most areas is mainly rhizomatous wheatgrass, Indian ricegrass, threadleaf sedge, and birdfoot sagebrush. The potential plant community on the Keyner soil is mainly rhizomatous wheatgrass, needleandthread grass, Indian ricegrass, and big sagebrush. If the range is overgrazed, the proportion of preferred

forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. This Cadoma Variant is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is poorly suited to hay and pasture. The main limitations ~~are~~ is the ~~very strong~~ alkalinity of the ~~soils and the lack of irrigation water~~ subsoils.

If this unit is used for housing and urban development, the main limitations ~~are the high seepage potential of~~ is the seepage for the Cadoma Variant soil.

This map unit is in capability subclass 6E irrigated or nonirrigated.

The Cadoma Variant soil is in the Loamy range site, 10 to 14 NP rangeland resource area. The Keyner soil is in the Loamy range site, 10 to 14 NP rangeland resource area. Included in this unit are areas with an Impervious Clay (5 to 9 BH) range site on the Orella and Arvada soils.

A typical area of this map unit is located in Sec. 21, T. 36 N., R. 85 W., on the Hells Half Acre Quadrangle.

Fullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

601--Louviers and Midway soils, 10 to 40 percent slopes. This map unit is on undulating to steep shale hills and eroded breaks. The native vegetation is mainly short grasses and shrubs. Elevation is 5,600 to 6,200 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 47 to 49 degrees F, and the average frost-free period is 100 to 130 days.

This unit is 70 percent Louviers clay and, or Midway clay loam and 20 percent Rock outcrop. Louviers and Midway soils are on convex shale hills and breaks and Rock outcrop is in severely eroded areas and on steep and very steep slopes.

Included in this unit is about 5 percent Cadoma clay loam on footslopes and about 5 percent Arvada clay loam on footslopes. The Louviers soil is very shallow and well drained. It formed in residuum derived dominantly from noncalcareous shale. Typically, the surface layer is light brownish gray clay about 6 inches thick. The subsoil is gray clay about 4 inches thick. Noncalcareous, soft shale is at a depth of 10 inches.

Permeability of the Louviers soil is slow. Available water capacity is very low. Effective rooting depth is 6 to 10 inches. Runoff is rapid and the hazard of water erosion is severe.

The Midway soil is very shallow and well drained. It formed in residuum, derived dominantly from calcareous shale. Typically, the surface layer is light brownish gray clay loam about 2 inches thick. The substratum is brown clay loam about 7 inches thick over soft calcareous shale.

Permeability of the Midway soil is slow. Available water capacity is very low. Effective rooting depth is 6 to 10 inches. Runoff is rapid and the hazard of water erosion is severe.

Rock outcrop is soft, dark gray shale.

This unit is used for rangeland, and wildlife habitat.

The potential plant community on this unit is mainly rhizomatous wheatgrass, Indian ricegrass, inland saltbush, and bluebunch wheatgrass. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to shale. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. Slope limits access by livestock and results in overgrazing of the less sloping areas. Loss of the surface layer results in a severe decrease in productivity and in the

potential of the unit to produce plants suitable for grazing. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are ~~steep~~ slopes, ~~and the depth to shale.~~ limited rooting depth and droughtiness.

This unit is poorly suited to housing and urban development. The main limitations are ~~the~~ shrink-swell potential, ~~the~~ depth to shale, and slope.

This map unit is in capability subclass 7E.

The Louviers soil is in the Shale range site, 10 to 14 NP rangeland resource area. The Midway soil is in the Shale range site, 10 to 14 NP rangeland resource area. Included in this unit are areas with an Impervéous Clay (5 to 9 BH) range site on the Cadoma and Arvada soils.

A typical area of this map unit is located in Sec. 16, T. 36 N., R. 84 W., on the Powder River Quadrangle.

625-DII
Fulton
4/82

ADVANCE DATA
SUBJECT TO CHANGE

602--Hiland loamy sand, 2 to 15 percent slopes. This very deep, well drained soil is on relict dunes. It formed in coarse textured eolian material. The native vegetation is mainly mid grasses and sagebrush. Elevation is 5,800 to 6,200 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 47 to 49 degrees F, and the average frost-free period is 100 to 130 days.

Included in this unit is about 10 percent Vona loamy sand atop relict dunes and about 10 percent Valent loamy sand in small scattered pockets.

Typically, the surface layer is pale brown loamy sand about 6 inches thick. The upper 7 inches of the subsoil is light yellowish brown sandy clay loam. The lower 11 inches is yellowish brown sandy loam. The upper 17 inches of the substratum is very pale brown sandy loam. The lower part to a depth of 60 inches is very pale brown loamy sand.

Permeability of this Hiland soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly needleandthread grass, prairie sandreed, Indian ricegrass, and silver sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases

and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. If the shrubs are managed to create open areas, this unit produces a good stand of desirable grasses and forbs. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If this unit is used for hay and pasture, the main limitations are ~~the lack of irrigation water~~ and slope.

This unit is poorly suited to housing and urban development. The main limitations are ~~the seepage potential~~ and slopes.

This map unit is in capability subclasses 4E, irrigated, and 4E, nonirrigated.

Sandy range site, 10 to 14 NP rangeland resource area. Included in this unit are areas with a Sandy (10 to 14 NP) range site on the Vona soil, and Sands (10 to 14 NP) range site on the Valent soil.

A typical area of this map unit is located in Sec. 8, T. 36 N., R. 84 W., Powder River Quadrangle.

Fallon
4/82

ADVANCE DATA
SUBJECT TO CHANGE

604--Farlow-Starley complex, 10 to 30 percent slopes. This map unit is on colluvial slopes below limestone ledges. The native vegetation is mainly short and mid grasses, forbs, and shrubs. Elevation is 7,800 to 8,700 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 40 degrees F, and the average frost-free period is less than 70 days.

This unit is 60 percent Farlow cobbly loam and 20 percent Starley cobbly loam. The Farlow soil, 15 to 30 percent slopes, is on colluvial slopes and the Starley soil, 10 to 20 percent slopes, is on ridges and upper slopes.

Included in this unit is about 10 percent deep soils with thick loamy surfaces in concave areas and 10 percent limestone ~~Rock~~ outcrop on ledges and ridges.

The Farlow soil is deep and well drained. It formed in colluvium derived dominantly from limestone. Typically, the surface layer is dark brown cobbly loam about 4 inches thick. The subsoil is dark yellowish brown cobbly loam about 4 inches thick. The substratum to a depth of 40 inches or more is light yellowish brown very cobbly loam.

Permeability of the Farlow soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 40 inches. Runoff is rapid and the hazard of water erosion is severe.

The Starley soil is shallow and well drained. It formed in colluvium and residuum derived dominantly from limestone. Typically, the surface layer is dark brown very stony loam about 4 inches thick. The substratum is brown to pale brown very stony loam about 10 inches thick over hard fractured limestone.

Permeability of the Starley soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid and the hazard of water erosion is severe.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Farlow soil is mainly Columbia needlegrass, Idaho fescue, prairie junegrass, and bluebunch wheatgrass. The present vegetation in most areas is mainly bluebunch wheatgrass, three-tip sagebrush, and big sagebrush. The production of vegetation suitable for livestock grazing is limited by the ~~rock fragments~~ in the surface layer.

The potential plant community on the Starley soil is mainly Columbia needlegrass, Idaho fescue, spike fescue, and bluebunch wheatgrass. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment.

The unit is poorly suited to hay and pasture. The main limitations are the cobbly and stony surface layer, slope, and short growing season.

This unit is poorly suited to housing and urban development. The main limitations are the depth to bedrock in the Starley soil and ~~the steep~~ slopes.

This map unit is in capability subclass 7S.

The Farlow soil is in the Shallow Loamy range site, 15 to 19 E rangeland resource area. The Starley soil is in the Coarse Upland range site, 15 to 19 E rangeland resource area. Included in this unit are areas with a Loamy (15 to 19 E) range site on the deep soils with thick loamy surfaces, and range site on the . A typical area of this map unit is located in Secs. 14 and 15, T. 39 N., R. 87 W., on the Badwater SE quadrangle.

Pullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

605--Parkay Variant-Rubble land association, sloping to steep. This map unit is on colluvial slopes beneath ledges of quartzitic sandstone. Slope is 8 to 40 percent. The native vegetation is mainly mid and tall grasses, big sagebrush, and scattered limber pine. Elevation is 7,800 to 8,500 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 42 degrees F, and the average frost-free period is less than 70 days.

This unit is 55 percent Parkay Variant bouldery loam and 20 percent Rubble land. The Parkay Variant soil is on colluvial slopes of 8 to 30 percent and Rubble land is at the base of rock ledges.

Included in this unit is about 10 percent ~~wet~~ poorly drained bouldery loams in drainageways and 10 percent very deep soils with very bouldery loam surfaces. Also, included in the Rubble land is 5 percent very shallow loams.

The Parkay Variant soil is very deep and well drained. It formed in bouldery colluvium derived dominantly from hard quarzitic sandstone. Typically, the surface layer is dark brown bouldery loam about 6 inches thick. The upper 18 inches of the subsoil is yellowish brown to dark brown bouldery clay loam. The lower 11 inches is yellowish brown extremely bouldery clay loam. The substratum to a depth of 60 inches or more is yellowish brown extremely bouldery loam.

Permeability of the Parkay Variant soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

Rubbleland includes the sandstone ledges of the Flathead formation as well as the colluvial boulders and stones beneath. Rubbleland also occurs near springs and drainageways in some areas.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Parkay Variant soil is mainly Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, and big sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. If the shrubs are managed to create open areas, this soil produces a good stand of desirable grasses and forbs. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment.

This unit is very poorly suited to hay and pasture. The main limitations are the bouldery surface layer.

This unit is poorly suited to housing and urban development. The main limitations are the boulders throughout the soil and the steep slopes.

This map unit is in capability unit 7S.

The Parkay Variant soil is in the Loamy range site, 15 to 19 E rangeland resource area. Included in this unit are areas with a ~~Subirrigated~~ Coarse Upland (15 to 19 E) range site on the very deep soils with bouldery surfaces, and Subirrigated (15 to 19 E) range site on the pearly around Bouldery loams. The very shallow loams have a Very Shallow (15 to 19 E) range site.

A typical area of this map unit is located in Sec. 14, T. 40 N., R. 80 W., on the Badwater NE quadrangle.

Fallon
4/82

ADVANCE DATA
SUBJECT TO CHANGE

606--Kezar Variant-Irigul-Clayburn association, hilly. This map unit is on igneous bedrock hills in the Big Horn Mountains. Slope is 5 to 35 percent. The native vegetation is mainly tall and mid grasses, forbs, and shrubs. Elevation is 7,200 to 8,500 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 42 degrees F, and the average frost-free period is less than 70 days.

This unit is 30 percent Kezar Variant loam, 5 to 35 percent slopes, 25 percent Irigul very gravelly loam, 5 to 35 percent slopes, and 25 percent Clayburn sandy loam, 5 to 15 percent slopes. The Kezar Variant soil is on hillslopes, the Irigul soil is on ridges, and the Clayburn soil is in concave bottoms.

Included in this unit is about 5 percent poorly drained loams in drainageways, 5 percent deep stony loams adjacent to drainageways, and 10 percent igneous rock outcrop on ridges.

The Kezar Variant soil is moderately deep and well drained. It formed in colluvium and residuum derived dominantly from igneous rock. Typically, the surface layer is dark grayish brown loam about 3 inches thick. The subsoil is dark grayish brown loam about 3 inches thick. The subsoil is dark grayish brown gravelly sandy clay loam about 12 inches thick. The substratum is dark grayish brown gravelly sandy clay loam about 9 inches thick over soft weathered gneiss at 24 inches.

Permeability of the Kezar Variant soil is moderate. Available water capacity is medium. Effective rooting depth is 20 to 40 inches. Runoff is rapid and the hazard of water erosion is severe.

The Irigul soil is shallow and well drained. It formed in colluvium and residuum derived dominantly from igneous bedrock. Typically, the surface layer is dark yellowish brown very gravelly sandy clay loam about 7 inches thick. The substratum is dark yellowish brown very cobbly sandy clay loam about 4 inches thick over hard granite at 11 inches.

Permeability of the Irigul soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid and the hazard of water erosion is severe.

The Clayburn soil is very deep and well drained. It formed in alluvium derived dominantly from igneous rock. Typically, the surface layer is very dark brown loam 5 inches thick. The subsoil is very dark grayish brown sandy clay loam about 29 inches thick. The substratum to a depth of 60 inches or more is yellowish brown gravelly sandy clay loam.

Permeability of the Clayburn soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat and recreation.

The potential plant community on the Kezar Variant and Clayburn soils is mainly Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, and big sagebrush.

The potential plant community on the Irigul soil is mainly Columbia needlegrass, Idaho fescue, western wheatgrass, and black sagebrush. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Slope limits access by livestock and results in overgrazing of the less sloping areas. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. If the shrubs are managed to create open areas, this unit produces a good stand of desirable grasses and forbs.

This unit is poorly suited to hay and pasture. The main limitations are the steep slopes and stones.

This unit is poorly suited to housing and urban development. The main limitations are ~~the~~ depth to bedrock and ~~high seepage potential of~~ the Kezar Variant and Irigul soils, and the shrink-swell potential ~~of~~ the Clayburn soil.

The Kezar Variant soil is in capability subclass 7E, the Irigul soil is in 7S, and the Clayburn soil is in 6E; nonirrigated.

The Kezar Variant soil is in the Loamy range site, 15 to 19 E rangeland resource area. The Irigul soil is in the Shallow Igneous range site, 15 to 19 E rangeland resource area. The Clayburn soil is in the Loamy range site, 15 to 19 E rangeland resource area.

A typical area of this map unit is located in Sec. 17, T. 40 N., R. 87 W., on the Badwater NE quadrangle.

Preliminary
4/82

ADVANCE DATA
SUBJECT TO CHANGE

607--Cathedral very gravelly loam, 20 to 45 percent slopes. This shallow, excessively drained soil is on steep, faulted igneous uplands. It formed in colluvium and residuum derived dominantly from igneous rock. The native vegetation is mainly short and mid grasses, forbs, and shrubs. Elevation is 7,000 to 7,500 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 42 degrees F, and the average frost-free period is less than 70 days.

Included in this unit is about 10 percent Kezar Variant loam in concave areas, 5 percent deep poorly drained loams adjacent to streams, and 10 percent igneous Rock outcrop on ridges and vertical canyon walls.

Typically, the surface layer is brown very gravelly loam about 4 inches thick. ~~The soil is . It formed in derived dominantly from .~~ The substratum is dark yellowish brown very gravelly sandy clay loam about 6 inches thick over weathered granite about 6 inches thick. Hard fractured granite is at a depth of 16 inches. In some areas the surface layer is very stony.

Permeability of the Cathedral soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid and the hazard of water erosion is severe.

This unit is used mainly for ~~wildlife habitat~~ rangeland. It is also used for recreation and watershed.

Paulsen
4/82

The potential plant community on this unit is mainly Columbia needlegrass, Idahoe fescue, bluebunch wheatgrass, and black sagebrush. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Slope limits access by livestock and results in overgrazing of the less sloping areas. Loss of the surface layer results in a severe decrease in productivity and in the potential of the unit to produce plants suitable for grazing. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are ~~the depth to bedrock~~ limited rooting depth and ~~the steep~~ slopes.

This unit is very poorly suited to housing and urban development. The main limitations are ~~the~~ depth to bedrock and ~~the steep~~ slopes.

This map unit is in capability subclass 7S.

Shallow Igneous range site, 15 to 19 E rangeland resource area. Included in this unit are areas with a Loamy (15 to 19 E) range site on the Kezar Variant, and Subirrigated (15 to 19 E) range site on the deep, poorly drained soils.

A typical area of this map unit is located in Secs. 23 and 24, T. 39 N., R. 88 W., on the Badwater SE quadrangle.

Ruiten
4/82

ADVANCE DATA
SUBJECT TO CHANGE

609--Clayburn-Moslander association, level to gently sloping. This map unit is on sloping mountain valley floors. The native vegetation is mainly mid and tall grasses, rushes, sedges, and shrubs. Elevation is 7,700 to 8,500 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 40 degrees F, and the average frost-free period is less than 70 days.

This unit is 60 percent Clayburn loam, 3 to 8 percent slopes, and 25 percent Moslander loam, 0 to 3 percent slopes. The Clayburn soil is on alluvial valley fans and the Moslander soil is on areas adjacent to springs and streams.

Included in this unit is about 10 percent Woosley loam on upper fans and 5 percent poorly drained stony soils intermixed with Moslander.

The Clayburn soil is very deep and well drained. It formed in alluvium derived dominantly from local bedrock. Typically, the surface layer is dark brown loam about 5 inches thick. The subsoil is brown to dark brown clay loam about 13 inches thick. The substratum to a depth of 60 inches or more is brown to pale brown gravelly loam. In some areas the surface layer is cobbly loam.

Permeability of the Clayburn soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

The Moslander soil is very deep and poorly drained. It formed in alluvium derived dominantly from local bedrock. Typically, the surface is covered with a mat of dense roots about 1 inch thick. The surface layer is dark gray loam about 8 inches thick. The substratum to a depth of 60 inches or more is mottled, light gray clay loam. In some areas the surface layer is cobbly or stony.

Permeability of the Moslander soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches for water-tolerant plants but is limited to depths between 0 and 6 inches for non-water-tolerant plants. Runoff is slow and the hazard of water erosion is moderate. A seasonal high water table fluctuates between depths of 0 to 18 inches in early spring through midsummer. This soil is subject to frequent periods of flooding in May through July.

This unit is used mainly for rangeland. It is also used for wildlife habitat and recreation.

The potential plant community on the Clayburn soil is mainly Idaho fescue, Columbia needlegrass, bluebunch wheatgrass, and big sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. If the shrubs are managed to create open areas, this soil produces a good stand of desirable grasses and forbs.

The potential plant community on the Moslander soil is mainly Nebraska sedge, tufted hairgrass, and alpine timothy. If the plant cover is disturbed, protection from flooding is needed to control gullying, streambank cutting, and sheet erosion. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

If this unit is used for hay and pasture, the main limitations are the short frost-free season and the excessive wetness of the Moslander soil. This unit is poorly suited to housing and urban development. The main limitations are the shrink-swell potential of the Clayburn soil and the flooding and wetness of the Moslander soil.

The Clayburn soil is in capability subclass 6E and the Moslander soil is in 5W, nonirrigated.

The Clayburn soil is in the Loamy range site, 15 to 19 E, precipitation zone . The Moslander soil is in the Subirrigated range site, 15 to 19 E, precipitation zone . Included in this unit are areas with a Loamy (15 to 19 E) range site on the Woosley, and Subirrigated (15 to 19 E) range site on the wet stony soils.

A typical area of this map unit is located in Sec. 13, T. 40 N., R. 86 W., on the First Water Draw quadrangle.

611--Boettcher-Brownsto complex, 10 to 30 percent slopes. This map unit is on hilly ~~uplands~~ strath terraces. The native vegetation is mainly mid-grasses, forbs, and shrubs. Elevation is 6,600 to 7,800 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F, and the average frost-free period is 70 to 100 days.

This unit is 60 percent Boettcher very cobbly clay loam and 25 percent Brownsto cobbly loam. The Boettcher soil is on hillsides and the Brownsto soil is intermixed with the Boettcher.

Included in this unit is about 5 percent Grail clay loam in concave areas, 5 percent shallow, very cobbly loams on ridges, and 5 percent rock outcrop on ridges.

The Boettcher soil is moderately deep and well drained. It formed in clayey calcareous material derived dominantly from shale and fine grained sandstone. Typically, the surface is covered with 40 to 60 percent cobbles and stones. The surface layer is brown very cobbly clay loam about 4 inches thick. The subsoil is brown cobbly clay about 14 inches thick. The substratum is very pale brown clay about 5 inches thick over soft calcareous shale at 23 inches.

Permeability of the Boettcher soil is slow. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

The Brownsto soil is deep and well drained. It formed in ~~clayey calcareous material~~ derived ~~dominantly~~ from ~~shale and fine grained sandstone~~. Typically, the surface is covered with 40 to 60 percent cobbles and stones. The surface layer is brown cobbly loam about 3 inches thick. The subsoil is pale brown cobbly clay loam about 15 inches thick. The substratum to a depth of 40 inches or more is pale brown very cobbly clay loam.

Permeability of the Brownsto soil is moderate. Available water capacity is moderate. Effective rooting depth is 40 or more inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly bluebunch wheatgrass, western wheatgrass, needleandthread, and big sagebrush. The production of vegetation suitable for livestock grazing is limited by cobbly and stony surface. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are the lack of irrigation water, steep slopes and cobbles and stones.

This unit is poorly suited to housing and urban development. The main limitations are the shrink-swell potential and depth to bedrock.

This map unit is in capability subclass 7E.

The Boettcher soil is in the shallow loamy range site, 10-14 SE rangeland resource area. The Brownsto soil is in the shallow loamy range site, 10-14 SE rangeland resource area. Included in this unit are areas with a loamy (15 to 19E) range site on the ~~shallow loamy (10 to 14 SE), and~~ Grail soil ~~range site on the~~ and shallow loamy (10 to 14 SE) on the shallow very cobbly soils.

A typical area of this map unit is located in Secs. 15 and 22, T. 39 N., R. 88 W., on the Badwater quadrangle.

Pullan
4/82

ADVANCE DATA
SUBJECT TO CHANGE

700--Rock outcrop. This map unit is on sloping to very steep barren rock surfaces, ledges, escarpments, and bouldery rubble. Slope is 20 to 100 percent. The native vegetation is mainly stunted limber pines or mountainmahogany growing out of fractures in the rocks.

This unit is about 85 percent barren rock that is primarily hard sandstone or limestone. Included in this unit is about 15 percent shallow and deep loamy soils that occur primarily in rock fractures, in narrow, deep gullies, and on small ledges.

This unit is used for wildlife habitat and livestock shelter.

The production of vegetation suitable for livestock grazing is limited by the high percentage of barren rock in this unit.

This unit is very poorly suited to housing and urban development. The main limitations are the high percentage of hard bedrock exposed in this unit.

This map unit is in capability unit 8S.

701--Griffy Variant-Kishona Variant association, gently sloping to moderately steep. This map unit is on broad, relict alluvial terraces and fans. Slope is 1 to 12 percent. The native vegetation is mainly short and mid grasses, forbs, and sagebrush. Elevation is 5,400 to 6,200 feet. The average annual precipitation is 5 to 9 inches, the average annual air temperature is 46 to 48 degrees F, and the average frost-free period is 120 to 140 days.

This unit is 55 percent Griffy Variant sandy clay loam and about 35 percent Kishona Variant clay loam. The Griffy Variant, 1 to 6 percent slopes, is on relict alluvial terraces and fans, and the Kishona Variant, 6 to 12 percent slopes, is in eroding drainageways.

Included in this unit is about 5 percent Emblem loam on relict terraces intermingled with Griffy Variant soils and 5 percent Saddle loam on ridges above drainageways.

The Griffy Variant soil is very deep and well drained. It formed in calcareous alluvium derived dominantly from sandy shale. Typically, the surface layer is pale brown sandy clay loam 1 to 2 inches thick. The subsoil is brown clay loam 5 inches thick. The upper 7 inches of the substratum is very pale brown, strongly calcareous clay loam. The lower part to a depth of 60 inches is pale brown, calcareous silty clay loam. Depth to thick accumulations of calcium carbonate ranges from 7 to 12 inches.

Permeability of the Griffy Variant soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

The Kishona Variant soil is very deep and well drained. It formed in calcareous alluvium, derived dominantly from sandstone or sandy shale. Typically, the surface layer is pale brown clay loam about 4 inches thick. The subsurface layer is pale brown, strongly calcareous clay loam 6 inches thick. The substratum to a depth of 60 inches or more is pale brown calcareous clay loam.

Permeability of the Kishona Variant soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Griffy Variant soil is mainly bluebunch wheatgrass, western wheatgrass, needleandthread, and Indian ricegrass. The potential plant community on the Kishona Variant soil is mainly bluebunch wheatgrass, western wheatgrass, needleandthread, and big sagebrush. The present vegetation in most areas is mainly threadleaf sedge, bluebunch wheatgrass, and needleandthread. The production of vegetation suitable for livestock grazing is limited by the depth to high concentrations of carbonates and the low annual precipitation.

Livestock grazing should be managed to protect the soils in this unit from excessive erosion. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soils to produce plants suitable for grazing.

This unit is very poorly suited to hay and pasture. The main limitations are the lack of dependable water for irrigation and the susceptibility of the soils to wind and water erosion when disturbed.

This unit is well suited to housing and urban development. It has few limitations.

This map unit is in capability subclass 6E.

The Griffy Variant soil is in the Shallow Loamy range site, 5 to 9 BH rangeland resource area. The Kishona Variant soil is in the Shallow Loamy range site, 5 to 9 BH rangeland resource area. Included in this unit are areas with a Shallow Loamy (5 to 9 BH) range site on the Emblem soil, and Shallow Loamy (5 to 9 BH) range site on the Saddle soil. Vegetation in this unit is not typical of the Shallow Loamy range site because of the dominance of threadleaf sedge. Production is limited by high accumulations of carbonates of depths less than 20 inches.

A typical area of this map unit is located in the W½ of Sec. 26, and in Sec. 27, T. 38 N., R. 85 W., on the Notches Dome quadrangle.

702--Forelle-Lupinto association, rolling. This map unit is on alluvial fans and remnant knolls. Slope is 4 to 18 percent. The native vegetation is mainly short and mid grasses, sagebrush, and sedges. Elevation is 6,100 to 6,500 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 44 to 46 degrees F, and the average frost-free period is 80 to 100 days.

This unit is 50 percent Forelle loam and 35 percent Lupinto gravelly loam. The Forelle soil is on alluvial fans, and the Lupinto soil is on remnant gravelly knolls.

Included in this unit is about 10 percent Diamondville loam on toeslopes of knolls and 5 percent Worfman sandy loam on knolls intermixed with Lupinto soils.

The Forelle soil is very deep and well drained. It formed in calcareous alluvium derived dominantly from sandstone. Typically, the surface layer is brown loam about 3 inches thick. The subsoil is brown clay loam 10 inches thick. The substratum to a depth of 60 inches or more is grayish brown calcareous loam.

Permeability of the Forelle soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

The Lupinto soil is deep and well drained. It formed in gravelly alluvium derived dominantly from hard shale and sandstone. Typically, the surface is covered with 20 to 50 percent gravels or channers. The surface layer is brown gravelly loam about 3 inches thick. The subsoil is brown gravelly clay loam about 7 inches thick. The upper 4 inches of the substratum is light yellowish brown, calcareous, very gravelly loam. The lower part to a depth of 40 inches is very pale brown, calcareous, extremely gravelly loam.

Permeability of the Lupinto soil is moderate. Available water capacity is moderate. Effective rooting depth is more than 40 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Forelle soil is mainly western wheatgrass, needleandthread, big sagebrush, and bluebunch wheatgrass. The present vegetation in most areas is mainly big sagebrush, western wheatgrass, prairie junegrass, and threadleaf sedge.

The potential plant community on the Lupinto soil is mainly bluebunch wheatgrass, western wheatgrass, black sagebrush, and mutton bluegrass. The present vegetation in most areas is mainly threadleaf sedge, bluebunch wheatgrass, prairie junegrass, and big sagebrush. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Treatment of areas infested with dense strands of sagebrush using chemical methods or by burning can help to increase the amount of desirable grasses and forbs.

This unit is poorly suited to hay and pasture. The main limitations are the lack of dependable water for irrigation and the erosion hazard on slopes greater than 10 percent.

The Forelle soil is well suited to housing and urban development. It has few limitations.

The Lupinto soil is poorly suited to housing and urban development. The main limitations are the high percentage of rock fragments in the soil causing excess seepage, and the low water holding capacity of this soil. When disturbed, these soils are also subject to erosion, and productivity is greatly reduced.

The Forelle soil is in capability subclass 4E (0-12%); 6E-(12+%), nonirrigated; and the Lupinto soil is in capability subclass 4E (4-10%); 6E-(10+%), nonirrigated.

The Forelle soil is in the loamy range site, 10-14 SE rangeland resource area. The Lupinto soil is in the shallow loamy range site, 10-14 SE rangeland resource area. Included in this unit are areas with a loamy (10-14SE) range site on the Diamondville soil, and shallow loamy (10-14 SE) range site on the Worfman soil.

A typical area of this map unit is located in the SE¼, Sec. 31, T. 38 N., R. 85 W., and S½, sec. 36, T. 38 N., R. 86 W., on the Notches Dome quadrangle.

703--Diamondville Variant-Rentsac-Worfman Variant complex, 4 to 20 percent slopes. This map unit is on sandstone cuestas. The native vegetation is mainly short and mid-grasses, forbs, and sagebrush. Elevation is 6,000 to 6,700 feet. The average annual precipitation is 10 to 14inches, the average annual air temperature is 44 to 46 degrees F, and the average frost-free period is 80 to 100 days.

This unit is 30 percent Diamondville Variant sandy loam, 4 to 12 percent slopes; 25 percent Rentsac very gravelly sandy clay loam, 6 to 20 percent slopes; and 20 percent Worfman Variant sandy loam, 6 to 15 percent slopes. The Diamondville Variant soil is on lower dipslopes, the Rentsac soil is on ridges and upper dipslopes, and the Worfman Variantyis on upper dipslopes.
Soil

Included in this unit is about 10 percent Rock River sandy loam on lower dipslopes and in swales, 10 percent shallow clayey soils over shale on backslopes and in swales, and 5 percent Rock outcrop on all parts of the landscape.

The Diamondville Variant soil is moderately deep and well drained. It formed in alluvium over residuum derived dominantly from sandstone. Typically, the surface layer is brown sandy loam about 2 inches thick. The subsoil is brown sandy clay loam 11 inches thick. The upper 5 inches of the substratum is pale brown, calcareous loam. The lower part to a depth of 24 inches is very pale brown, calcareous, very gravelly sandy loam. Hard sandstone of the Frontier formation is at a depth of 24 inches.

Permeability of the Diamondville Variant soil is moderate. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

The Rentsac soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from sandstone. Typically, the surface is covered with 40 to 70 percent gravel, channers, or cobble. The surface layer is brown very gravelly sandy clay loam about 2 inches thick. The subsurface layer is pale brown, calcareous, very gravelly sandy clay loam 4 inches thick. The substratum is pale brown, calcareous, very gravelly sandy loam 4 inches thick over hard sandstone. In some areas the surface layer is very gravelly loam or cobbly loam.

Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 9 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

The Worfman Variant soil is shallow and well drained. It formed in residuum or alluvium over residuum derived dominantly from sandstone or sandy shale. Typically, the surface layer is brown sandy loam about 4 inches thick. The upper 5 inches of the subsoil is brown sandy clay loam. The lower 8 inches is light brown, calcareous clay loam overlaying hard sandstone.

Permeability of the Worfman Variant soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Diamondville Variant soil is mainly western wheatgrass, big sagebrush, needleandthread, and prairie junegrass. The potential plant community on the Rentsac and Worfman Variant soil is mainly bluebunch wheatgrass, western wheatgrass, black sagebrush, and needleandthread. ~~The present vegetation on the Rentsac soil is mainly bluebunch wheatgrass, needleandthread, prairie junegrass, and threadleaf sedge. The present vegetation on the Worfman Variant is mainly big sagebrush, bluebunch wheatgrass, prairie junegrass, and mutton bluegrass.~~

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are ~~depth to bedrock, the lack of dependable irrigation~~ water, and ~~the potential for soil~~ erosion on slopes greater than 10 percent.

This unit is very poorly suited to housing and urban development. The main limitations are the depth to bedrock. Cuts needed to provide essentially level building sites can expose bedrock. ~~Other limitations include the high potential for erosion on disturbed areas on slopes greater than 10 percent, and the high percentage of rock fragments in the Rentsac soil.~~

This map unit is in capability subclass 6E.

The Diamondville Variant soil is in the loamy range site, 10-14 SE rangeland resource area. The Rentsac soil is in the shallow loamy range site, 10-14 SE rangeland resource area. The Worfman Variant soil is in the shallow loamy range site, 10-14 SE rangeland resource area. Included in this unit are areas with a loamy (10-14 SE) range site on the Rock River soil, and shallow loamy (10-14 SE) range site on the shallow clayey soils over shale.

A typical area of this map unit is located in the N½, Sec. 6, T. 37 N., R. 85 W., and Sec. 1, T. 37 N., R. 86 W., on the Notches Dome quadrangle.

Rillon
4/82

704--Sinkson-Brownsto association, level to gently rolling. This map unit is on alluvial fans and remnant gravelly knolls. Slope is 0 to 6 percent. The native vegetation is mainly sagebrush, mid grasses, and forbs. Elevation is 6,000 to 6,500 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 43 to 46 degrees F, and the average frost-free period is 80 to 100 days.

This unit is 65 percent Skinkson loam and 25 percent Brownsto gravelly loam. The Sinkson soil is on alluvial fans, and the Brownsto soil is on remnant knolls.

Included in this unit is about 10 percent very cobbly soils intermixed with Sinkson.

The Sinkson soil is very deep and well drained. It formed in alluvium derived dominantly from reddish sandstone. Typically, the surface layer is reddish brown calcareous loam 5 inches thick. The subsurface layer is reddish brown calcareous loam 10 inches thick. The substratum to a depth of 60 inches or more is light reddish brown calcareous loam. Some of these soils contain thin and discontinuous seams of gravel.

Permeability of the Sinkson soil is moderate. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is moderate.

The Brownsto soil is deep and well drained. It formed in gravelly and cobbly outwash derived dominantly from reddish sandstone. Typically, the surface is covered with 10 to 40 percent gravel, cobbles, or stones. The surface layer is light reddish brown, calcareous gravelly loam about 8 inches thick. The subsurface layer is light reddish brown, strongly calcareous gravelly loam 6 inches thick. The upper 20 inches of the substratum is light brown, strongly calcareous very gravelly loam. The lower part to a depth of 60 inches is light reddish brown very gravelly sandy loam.

Permeability of the Brownsto soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 40 to 60 inches. Runoff is slow and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Sinkson soil is mainly western wheatgrass, needleandthread, big sagebrush, and mutton bluegrass. The present vegetation in most areas is mainly needleandthread, big sagebrush, rabbitbrush, and Indian ricegrass.

The potential plant community on the Brownsto soil is mainly bluebunch wheatgrass, western wheatgrass, needleandthread, and black sagebrush. The present vegetation in most areas is mainly threadleaf sedge, bluebunch wheatgrass, needleandthread, and prairie junegrass.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

The Sinkson soil is well suited to hay and pasture. It has few limitations.

The Brownsto soil is poorly suited to hay and pasture. The main limitations are the high percentage of rock fragments in the soil.

Proper stocking rates, pasture rotation, and restricted grazing during wet periods help to keep the pasture in good condition and to protect the soil from erosion.

If this unit is used for housing and urban development, the main limitations are the severe hazard of wind or water erosion on disturbed areas, the potential for seepage, and the high percentage of rock fragments in the Brownsto soil.

The Sinkson soil is in capability subclass 4E, nonirrigated, and the Brownsto soil is in capability subclass 7S, nonirrigated.

The Sinkson soil is in the Loamy range site, 10 to 14 SE precipitation zone. The Brownsto soil is in the Shallow Loamy range site, 10 to 14 SE precipitation zone. Included in this unit are areas of deep, loamy-skeletal soils in the Shallow Loamy (10 to 14 SE) range site.

A typical area of this map unit is located in the S½, Sec. 33 and the S½, Sec. 34, T. 40 N., R. 85 W., on the First Water Draw quadrangle.

Fielder
4/82

ADVANCE DATA
SUBJECT TO CHANGE

705--Brownsto-Thermopolis association, gently sloping to steep. This map unit is on strath terraces underlain by redbed material. Slope is 2 to 25 percent. The native vegetation is mainly short and mid grasses, sedges, sagebrush, and forbs. Elevation is 6,100 to 6,600 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 43 to 45 degrees F, and the average frost-free period is 80 to 100 days.

This unit is 65 percent Brownsto gravelly loam, 2 to 12 percent slopes, and 20 percent Thermopolis loam, 10 to 25 percent slopes. The Brownsto soil is on terrace slopes and the Thermopolis soil is on terrace shoulders.

Included in this unit is about 5 percent Rentsac cobbly loam on terrace shoulders above Rock outcrops, 5 percent Sinkson loam in draws and drainage bottoms and 5 percent Rock outcrop on ridges and escarpments.

The Brownsto soil is deep and well drained. It formed in gravelly and cobbly outwash derived dominantly from red calcareous sandstone or siltstone. Typically, the surface is covered with 20 to 50 percent gravels, cobbles, or stones. The surface layer is reddish brown gravelly loam about 4 inches thick. The subsurface layer is reddish brown, calcareous stony loam 6 inches thick. The substratum to a depth of 40 ~~or more~~ inches or more is light reddish brown, very strongly calcareous, very stony loam. Depth to thick accumulations of calcium carbonate ranges from 6 to 10 inches.

Permeability of the Brownsto soil is moderately rapid. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is moderate.

The Thermopolis soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from redbed material. Typically, the surface layer is dark reddish gray loam about 4 inches thick. The substratum is reddish brown loam 14 inches thick over red siltstone. Depth to soft bedrock ranges from 10 to 18 inches.

Permeability of the Thermopolis soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 18 inches. Runoff is rapid and the hazard of water erosion is high.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly bluebunch wheatgrass, western wheatgrass, and black sagebrush. The present vegetation in most areas is mainly threadleaf sedge, bluebunch wheatgrass, needleandthread, and prairie junegrass. The production of vegetation suitable for livestock grazing is limited by the low available water capacity of the Brownsto and Thermopolis soils. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired

balance of preferred species is maintained in the plant community. Livestock grazing should be managed to protect the unit from excessive erosion. Loss of the surface layer results in a severe decrease in productivity and in the potential of the unit to produce plants suitable for grazing. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are the low available water capacity of the soils, the high percentage of rock fragments in the Brownsto soil, and the erosion hazard on slopes greater than 6 percent.

This unit is poorly suited to housing and urban development. The main limitations are the high percentage of rock fragments in the Brownsto soil, depth to bedrock in the Thermopolis soil, and the erosion hazard on slopes greater than 6 percent.

The Brownsto soil is in capability subclass 7S, nonirrigated, and the Thermopolis soil is in capability subclass 7E, nonirrigated.

The Brownsto soil is in the Shallow Loamy range site, 10 to 14 SE precipitation zone. The Thermopolis soil is in the Shallow Loamy range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Shallow Loamy (10 to 14 SE) range site on the Rentsac soil, and Loamy (10 to 14 SE) range site on the Sinkson soil.

A typical area of this map unit is located in the SW¼, Sec. 27, the SE¼, Sec. 28, the NE¼, Sec. 33, and the NW¼, Sec. 34, T. 40 N., R. 85 W., on the First Water Draw quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

706--Rentsac, thin-Rock outcrop-Rentsac complex, 5 to 30 percent slopes. This map unit is on the dip slopes of sandstone cuestas. The native vegetation is mainly short and mid grasses, forbs, woody shrubs, and scattered coniferous trees. Elevation is 6,400 to 7,500 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 41 to 43 degrees F, and the average frost-free period is 70 to 90 days.

This unit is 55 percent Rentsac, thin gravelly loam, 5 to 25 percent slopes; 20 percent Rock outcrop, and 10 percent Rentsac gravelly loam, 5 to 15 percent slopes.

Included in this unit is about 5 percent Thermopolis gravelly loam on foot slopes below remnant red sandstone knolls and outcrops, 5 percent Rock River sandy clay loam in draws and depressional areas, and 5 percent deep, calcareous, loamy soils on colluvial slopes below remnant sandstone knolls.

The Rentsac, thin soil is very shallow and excessively drained. It formed in calcareous residuum derived dominantly from sandstone. Typically, the surface is covered with 40 to 80 percent gravels, cobbles, or flagstones. The surface layer is brown gravelly loam about 3 inches thick. The substratum is brown very gravelly loam 3 inches thick over hard, fractured sandstone. In some areas the surface layer is cobbly loam or very cobbly loam. Depth to hard sandstone bedrock ranges from 5 to 10 inches.

Permeability of the Rentsac, thin soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 5 to 10 inches. Runoff is medium and the hazard of water erosion is moderate.

The Rock outcrop component consists of approximately 10 percent sandstone that outcrops on slopes of 10 to 30 percent. It also includes 10 percent remnant knolls of reddish and yellowish soft sandstone on slopes of 15 to 30 percent.

The Rentsac soil is shallow and somewhat excessively drained. It formed in calcareous residuum derived dominantly from sandstone. Typically, the surface is covered with 20 to 60 percent gravels or cobbles. The surface layer is dark yellowish brown gravelly loam about 5 inches thick. The subsurface layer is yellowish brown very gravelly loam 7 inches thick. The substratum is light yellowish brown, very gravelly loam 5 inches thick over hard, fractured sandstone. Depth to hard sandstone bedrock ranges from 10 to 20 inches.

Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used for rangeland and wildlife habitat.

The potential plant community on the Rentsac, thin soil is mainly bluebunch wheatgrass, prairie junegrass, threadleaf sedge, and scattered mountainmahogany. The production of vegetation suitable for livestock grazing is limited by the depth to bedrock and very low available water capacity.

The potential plant community on the Rentsac soil is mainly bluebunch wheatgrass, prairie junegrass, and big sagebrush. The production of vegetation suitable for livestock grazing is limited by the depth to bedrock and very low available water capacity.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are the very low available water capacity, shallow depth to bedrock, and the high percentage of rock fragments in the soils.

This unit is very poorly suited to housing and urban development. The main limitations are the shallow depth to bedrock and the erosion hazard on slopes greater than 8 percent. Cuts needed to provide essentially level building sites can expose bedrock.

This map unit is in capability subclass 7S.

The Rentsac, thin soil is in the Very Shallow range site, 10 to 14 SE precipitation zone. The Rentsac soil is in the Shallow Loamy range site, 10 to 14 SE precipitation zone. Included in this unit are Shallow Loamy (10 to 14 SE) range sites on Thermopolis soils and on deep, calcareous, loamy soils; and a Loamy (10 to 14 SE) range site on Rock River soils.

A typical area of this map unit is located in the E½, Sec. 19, and W½, Sec. 20, T. 40 N., R. 85 W., on the First Water Draw quadrangle.

Fuller
4/82

ADVANCE DATA
SUBJECT TO CHANGE

707--Rock outcrop-Rentsac, thin association, steep to very steep. This map unit is on steep canyons eroding through sandstone. The native vegetation is mainly short and mid grasses, forbs, sagebrush, and mountainmahogany. Elevation is 6,400 to 7,400 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 41 to 43 degrees F, and the average frost-free period is 70 to 90 days.

This unit is 60 percent Rock outcrop and 30 percent Rentsac thin, gravelly loam. Rock ~~land~~ outcrop is on steep sandstone cliffs and bouldery rubble, and the Rentsac, thin soil is on canyon benches on slopes of 10 to 30 percent.

Included in this unit is about 10 percent deep loamy soils in the bottom of canyons.

The Rock outcrop component typically is hard thinly bedded sandstone. It may also include bouldery rubble in the bottom of narrow canyons where soils is either absent or present only in small pockets.

The Rentsac, thin soil is very shallow and excessively drained. It formed in calcareous residuum derived dominantly from sandstone. Typically, the surface is covered with 20 to 80 percent gravels, cobbles, or flagstones. The surface layer is brown gravelly loam about 3 inches thick. The substratum is brown very gravelly loam 4 inches thick over hard sandstone bedrock. Depth to hard sandstone bedrock ranges from 5 to 10 inches.

Permeability of the Rentsac, thin soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 5 to 10 inches. Runoff is medium and the hazard of water erosion is high.

This unit is used mainly for wildlife habitat. It is also used for rangeland.

The potential plant community on the Rentsac, thin soil is mainly bluebunch wheatgrass, big sagebrush, prairie junegrass, and scattered mountainmahogany. The production of vegetation suitable for livestock grazing is limited by the high percentage of rock outcrop in the unit, and the very low available water capacity of the Rentsac, thin soil. Slope limits access by livestock and results in overgrazing of the less sloping areas.

This unit is very poorly suited to hay and pasture. The main limitations are the very shallow depth, rockiness, and steepness of slope.

This unit is very poorly suited to housing and urban development. The main limitations are slope and the very shallow depth to bedrock.

Rock outcrop is in capability subclass 8S and the Rentsac, thin soil is in capability subclass 7S; nonirrigated.

The Rentsac, thin soil is in the Very Shallow range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Loamy (10 to 14 SE) range site on the deep loamy soils in canyon bottoms.

A typical area of this map unit is located in the N½, NE¼, Sec. 20, T. 40 N., R. 85 W., on the First Water Draw quadrangle.

Pullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

708--Starley-Rock outcrop complex, 4 to 25 percent slopes. This map unit is on limestone ridges and hillslopes. The native vegetation is mainly mid grasses, sagebrush, and forbs. Elevation is 7,600 to 8,600 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 40 degrees F, and the average frost-free period is 50 to 60 days.

This unit is 60 percent Starley cobbly loam and 20 percent Rock outcrop. Starley soils and Rock outcrop are intermixed on mountain ridges and hillslopes.

Included in this unit is about 10 percent very shallow, very cobbly soils associated with Rock outcrop on ridges and hillslopes and 10 percent deep, red, loamy soils on colluvial slopes.

The Starley soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from limestone. Typically, the surface layer is dark brown cobbly loam about 3 inches thick. The subsurface layer is brown cobbly loam 5 inches thick. The upper 5 inches of the substratum is pale brown very cobbly clay loam. The lower part to a depth of 19 inches is very pale brown, very cobbly loam. Hard, fractured limestone bedrock is at a depth of 19 inches.

In some areas the surface layer is gravelly loam. Depth to limestone bedrock ranges from 10 to 20 inches.

Permeability of the Starley soil is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid and the hazard of water erosion is high.

Rock outcrop consists of gray, massive, cavernous, cherty limestone and dolomite.

This unit is used mainly for summer range. It is also used for wildlife habitat.

The potential plant community on the Starley soil is mainly Columbia needlegrass, Idaho fescue, and spike fescue. The present vegetation in most areas is mainly Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, and lupines. Scattered limber pine occur on very shallow soils associated with Rock outcrop. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Loss of the surface layer results in a severe decrease in productivity and in the potential of the to produce plants suitable for grazing.

This unit is very poorly suited to hay and pasture. The main limitations are the shallow depth to bedrock, the high percentage of coarse fragments present, and the very low available water capacity.

This unit is poorly suited to housing and urban development. The main limitations are the shallow depth to bedrock and the severe erosion hazard on slopes greater than 15 percent. Cuts needed to provide essentially level building sites can expose bedrock. Excavation for roads and buildings increases the hazard of erosion.

This map unit is in capability subclass 7S.

The Starley soil is in the Shallow Loam range site, 15 to 19 E precipitation zone. Included in this unit are areas with a Very Shallow (15 - 19 E) range site on the very shallow, very cobbly soils; and Loamy (15 to 19 E) range site on the deep red loamy soils.

A typical area of this map unit is located in the SE¼, Sec. 30, T. 41 N., R. 85 W., on the First Water Draw quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

709--Forsey-Starley complex, 8 to 35 percent slopes. This map unit is on steep colluvial mountain valley slopes. The native vegetation is mainly sagebrush, mid and tall grasses, and forbs. Elevation is 7,800 to 8,600 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 38 to 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 60 percent Forsey flaggy loam, 15 to 35 percent slopes; and 25 percent Starley gravelly sandy loam, 8 to 25 percent slopes. Forsey soils are on steep colluvial slopes, and Starley soils are on limestone hillslopes and narrow ridges.

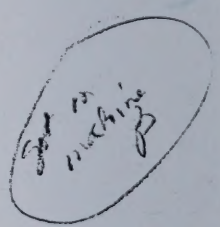
Included in this unit is about 5 percent Woosley loam in narrow draws and valley bottoms, 5 percent loamy red soils on colluvial slopes, and 5 percent Rock outcrop on steep valley slopes below ridges.

The Forsey soil is deep and well drained. It formed in colluvium derived dominantly from limestone and sandstone. Typically, the surface is covered with 20 to 50 percent cobbles and stones and 5 to 10 percent boulders. The upper 8 inches of the subsoil is brown to dark brown very flaggy clay loam. The lower 6 inches is brown extremely flaggy clay loam. The upper 14 inches of the substratum is pale brown, calcareous, extremely flaggy loam. The lower part to a depth of 40 or more inches is pale brown, calcareous extremely flaggy loam. In some areas the surface layer is cobbly loam or stony loam. Depth to accumulations of carbonates ranges from 7 to 18 inches.

Permeability of the Forsey soil is moderate. Available water capacity is low. Effective rooting depth is 40 or more inches. Runoff is rapid and the hazard of water erosion is high.

The Starley soil is shallow and somewhat excessively drained. It formed in residuum or colluvium over residuum derived dominantly from limestone. Typically, the surface is covered with 20 to 60 percent gravels, cobbles, or stones. The surface layer is dark grayish brown gravelly sandy loam about 4 inches thick. The subsurface layer is brown very gravelly loam 3 inches thick. The substratum is pale brown very gravelly loam 6 inches thick over hard limestone bedrock. Depth to limestone bedrock ranges from 12 to 18 inches.

Permeability of the Starley soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 12 to 18 inches. Runoff is rapid and the hazard of water erosion is high.



This unit is used for summer range and for wildlife habitat.

The potential plant community on the Forsey soil is mainly Columbia needlegrass, Idaho fescue, western wheatgrass, and bluebunch wheatgrass. The present vegetation in most areas is mainly big sagebrush, threetip sagebrush, Idaho fescue, and bluebunch wheatgrass. The production of vegetation suitable for livestock grazing is limited by the large percentage and size of rock fragments in this soil and the low available water capacity.

The potential plant community on the Starley soil is mainly Idaho fescue, bluebunch wheatgrass, threetip sagebrush, and spike fescue. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Slope limits access by livestock and results in overgrazing of the less sloping areas. Access is also limited on areas with greater than 40 percent stones and boulders on the surface.

This unit is poorly suited to hay and pasture. The main limitations are the high percentage of rock fragments in the soils and steepness of slope.

This unit is poorly suited to development. The main limitations are the high percentage of rock fragments, steepness of slope, and depth to bedrock in the Starley soils.

This map unit is in capability subclass 7S.

The Forsey soil is in the Coarse Upland range site, 15 to 19 E precipitation zone. The Starley soil is in the Shallow Loamy range site, 15 to 19 E precipitation zone. Included in this unit are areas with a Loamy (15 to 19 E) range site on the Woosley, and deep, loamy, red soils.

A typical area of this map unit is located in the N½, Sec. 32, and the NW¼, Sec. 33, T. 41 N., R. 85 W., on the First Water Draw quadrangle.

Perkins
4/82

ADVANCE DATA
SUBJECT TO CHANGE

710--Decross-Woosley association, sloping. This map unit is on alluvial fans and terraces in mountain valleys. Slope is 2 to 15 percent. The native vegetation is mainly mid and tall grasses, forbs, and sagebrush. Elevation is 7,000 to 8,200 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 40 to 41 degrees F, and the average frost-free period is 50 to 65 days.

This unit is 45 percent Decross loam, 5 to 15 percent slopes, and 35 percent Woosley loam, 2 to 15 percent slopes. Decross soils are on alluvial fans and in drainages and Woosley soils are on terraces.

Included in this unit is about 10 percent deep, poorly drained, loamy soils along drainages and springs and 10 percent deep, calcareous, loamy soils in swales on terraces.

The Decross soil is very deep and well drained. It formed in alluvium derived dominantly from limestone or calcareous siltstone. Typically, the surface layer is dark grayish brown loam about 4 inches thick. The upper 12 inches of the subsoil is dark grayish brown loam. The lower 8 inches is brown clay loam. The substratum to a depth of 60 inches or more is pale brown to light yellowish brown, calcareous clay loam.

Permeability of the Decross soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

The Woosley soil is moderately deep and well drained. It formed in alluvium over residuum derived dominantly from limestone or calcareous siltstone. Typically, the surface layer is brown sandy loam about 5 inches thick. The upper 7 inches of the subsoil is brown loam. The lower 14 inches is brown clay loam. The substratum is very pale brown gravelly sandy loam 7 inches thick over hard limestone bedrock. In some areas the surface layer is loam. Depth to hard limestone bedrock ranges from 20 to 40 inches.

Permeability of the Woosley soil is moderate. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for summer range. It is also used for wildlife habitat.

The potential plant community on this unit is mainly western wheatgrass, big sagebrush, Idaho fescue, and Columbia needlegrass. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. If the shrubs are managed to create open areas, this unit produces a good stand of desirable grasses and forbs.

If this unit is used for hay and pasture, the main limitations are the erosion hazard on slopes greater than 8 percent and the lack of dependable water for irrigation on some areas of this unit.

The Decross soil is well suited to housing and urban development. It has few limitations.

The Woosley soil is poorly suited to housing and urban development. The main limitations are the depth to bedrock, the erosion hazard on slopes greater than 8 percent, and the seepage potential. Cuts needed to provide essentially level building sites can expose bedrock. The hazard of erosion is increased if the soil is left exposed during site development. Effluent from septic tank absorption fields can surface in downslope areas and thus create a hazard to health.

The Decross soil is in capability subclass 6E, nonirrigated, and the Woosley soil is in capability subclass 6E, nonirrigated.

The Decross soil is in the Loamy range site, 15 to 19 E precipitation zone. The Woosley soil is in the Loamy range site, 15 to 19 E precipitation zone. Included in this unit are areas with a Subirrigated (15 to 19 E) range site on the deep, ~~not~~ poorly drained, loamy soils, and Loamy (15 to 19 E) range site on the deep, calcareous, loamy soils.

A typical area of this map unit is located in the E½, Sec. 30, T. 41 N., R. 88 W., on the Sioux Pass quadrangle.

Rullen
142

ADVANCE DATA
SUBJECT TO CHANGE

711--Castner-Rock outcrop complex, 5 to 25 percent slopes. This map unit is on sandstone cuestas. The native vegetation is mainly mountainmahogany, mid grasses, sedges, and forbs. Elevation is 6,600 to 7,600 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 41 to 43 degrees F, and the average frost-free period is 70 to 90 days.

This unit is 55 percent Castner gravelly fine sandy loam and 25 percent Rock outcrop. Castner soils and Rock outcrop are on dip slopes.

Included in this unit is about 10 percent shallow loamy soils on dip slopes and 10 percent deep loamy soils in draws and narrow drainages.

The Castner soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from sandstone. Typically, the surface is covered with 10 to 40 percent sandstone gravels and cobbles. The surface layer is brown gravelly fine sandy loam about 2 inches thick. The subsurface layer is brown cobbly fine sandy loam 6 inches thick. The substratum is pale brown, calcareous, extremely cobbly loam 6 inches thick over hard, fractured sandstone of the Tensleep formation. Depth to sandstone bedrock ranges from 9 to 19 inches.

Permeability of the Castner soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 9 to 19 inches. Runoff is medium and the hazard of water erosion is moderate. The hazard of soil blowing is high.

The Rock outcrop component consists primarily of sandstone ledges along draws and ridges and may also include bouldery rubble in some areas.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly mountainmahogany, bluebunch wheatgrass, Idaho fescue, and spike fescue. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Livestock grazing should be managed to protect the Castner soil from excessive erosion.

This unit is very poorly suited to hay and pasture. The main limitations are the depth to bedrock, the high percentage of rock fragments in this unit, and the severe erosion hazard.

This unit is very poorly suited to housing and urban development. The main limitations are the shallow depth to bedrock and the severe erosion hazard on slopes greater than 8 percent. Cuts needed to provide essentially level building sites can expose bedrock.

This map unit is in capability subclass 7S.

The Castner soil is in the Very Shallow range site, 15 to 19 E precipitation zone. Included in this unit are areas with a Shallow Loamy (15 to 19 E) range site on the shallow loamy soils, and Loamy (15 to 19 E) range site on the deep loamy soils.

A typical area of this map unit is located in the NW¼, Sec. 19, T. 40 N., R. 85 W., on the First Water Draw quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

712--Inchau-Clayburn-Chittum complex, 4 to 20 percent slopes. This map unit is on cuestas. The native vegetation is mainly mid and tall grasses, forbs, and sagebrush. Elevation is 7,500 to 8,800 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 39 to 40 degrees F, and the average frost-free period is 45 to 60 days.

This unit is 35 percent Inchau fine sandy loam, 6 to 20 percent slopes; 30 percent Clayburn loam, 4 to 15 percent slopes; and 20 percent Chittum fine sandy loam, 4 to 10 percent slopes. Inchau soils are on dip slopes, Clayburn soils are in swales at the base of scarps, and Chittum soils are on upper dip slopes.

Included in this unit is about 5 percent Nielsen very stony loam on ridges; 5 percent deep, calcareous, loamy soils in swales and saddles between ridges; and 5 percent Rock outcrop on scarps.

The Inchau soil is moderately deep and well drained. It formed in colluvium over residuum derived dominantly from noncalcareous quartzitic sandstone. Typically, the surface layer is very dark grayish brown fine sandy loam about 4 inches thick. The subsoil is grayish brown clay loam 17 inches thick. The substratum is dark yellowish brown sandy clay 9 inches thick over weathered Flathead sandstone residuum. In some areas the surface layer is loam. Depth to sandstone residuum ranges from 20 to 40 inches.

Permeability of the Inchau soil is moderate. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

The Clayburn soil is very deep and well drained. It formed in alluvium or colluvium derived dominantly from noncalcareous quartzitic sandstone. Typically, the surface layer is very dark grayish brown loam about 6 inches thick. The upper 10 inches of the subsoil is very dark grayish brown loam. The lower 13 inches is dark brown clay loam. The substratum to a depth of 60 or more inches or more is pale brown coarse loam. Coarse loamy sand occurs in some pedons at depths of 40 inches or more.

Permeability of the Clayburn soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is low.

The Chittum soil is shallow and well drained. It formed in colluvium over residuum derived dominantly from noncalcareous quartzitic sandstone. Typically, the surface layer is very dark brown fine sandy loam about 4 inches thick. The upper 8 inches of the subsoil is dark brown sandy clay loam. The lower 7 inches is dark yellowish brown sandy clay loam. Flathead sandstone bedrock is at a depth of 19 inches. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Chittum soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for summer range. It is also used for wildlife habitat.

The potential plant community on the Inchau soil is mainly ~~e~~western wheatgrass, Idaho fescue, and spike fescue. The potential plant community on the Clayburn soil is mainly western wheatgrass, Idaho fescue, and spike fescue. The present vegetation in most areas is mainly big sagebrush, Idaho fescue, western wheatgrass, and lupines.

The potential plant community on the Chittum soil is mainly Idaho fescue, bluebunch wheatgrass, western wheatgrass, and spike fescue. The present vegetation in most areas is mainly big sagebrush, bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. The production of vegetation suitable for livestock grazing is limited by the depth to bedrock and the low available water capacity. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired

balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. If the shrubs are managed to create open areas, this unit produces a good stand of desirable grasses and forbs.

If this unit is used for hay and pasture, the main limitations are the depth to bedrock in the Chittum soil and the erosion hazard on slopes greater than 10 percent.

If this unit is used for housing and urban development, the main limitations are the depth to bedrock, and seepage potential on the Inchau soil, and the erosion hazard on slopes of 10 percent or more.

This map unit is in capability subclass 6E.

The Inchau soil is in the loamy range site, 15-19E precipitation zone. The Clayburn soil is in the loamy range site, 15-19E precipitation zone. The Chittum soil is in the shallow loamy range site, 15-19E precipitation zone. Included in this unit are areas with a very shallow (15-19E) range site on the Nielsen soil; and loamy (15-19E) range site on the deep, calcareous, loamy soils.

A typical area of this map unit is located in the W½, Sec. 1, and in Sec. 2, T. 40 N., R. 89 W., on the Sioux Pass quadrangle.

Fullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

713--Bachus-Clayburn association, undulating. This map unit is on undulating fans and terraces in broad mountain valleys. Slope is 2 to 15 percent. The native vegetation is mainly sagebrush, mid and tall grasses, and forbs. Elevation is 7,000 to 8,500 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 39 to 41 degrees F, and the average frost-free period is 50 to 65 days.

This unit is 60 percent Bachus loam, 5 to 15 percent slopes; and 25 percent Clayburn loam, 2 to 6 percent slopes. Bachus soils are on convex slopes and Clayburn soils are on concave slopes.

Included in this unit is about 10 percent Moslander loam adjacent to wet drainages and springs and 5 percent Woosley loam on slopes breaks.

The Bachus soil is moderately deep and well drained. It formed in alluvium or colluvium over residuum derived dominantly from quartzitic sandstone. Typically, the surface layer is very dark gray loam about 4 inches thick. The subsoil is dark grayish brown clay loam about 12 inches thick. The substratum is brown cobbly clay loam about 6 inches thick over hard, fractured Flathead sandstone. In some areas, the surface is covered with 10 to 20 percent stones and small boulders. Depth to hard sandstone bedrock ranges from 20 to 40 inches.

Permeability of the Bachus soil is moderate. Available water capacity is moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

The Clayburn soil is very deep and well drained. It formed in alluvium derived dominantly from quartzitic sandstone. Typically, the surface layer is very dark grayish brown loam about 5 inches thick. The upper 18 inches of the subsoil is dark grayish brown silty clay loam or clay loam. The lower 14 inches is yellowish brown clay loam. The substratum to a depth of 60 inches or more is pale brown coarse sandy loam.

Permeability of the Clayburn soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for summer range. It is also used for wildlife habitat.

The potential plant community on this unit is mainly Idaho fescue, Columbia needlegrass, and spike fescue. The present vegetation in most areas is mainly big sagebrush, Idaho fescue, Columbia needlegrass, and western wheatgrass. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. If the shrubs are managed to create open areas, this unit produces a good stand of desirable grasses and forbs. This unit is

suited to hay and pasture. The main limitations are the depth to bedrock on the Bachus soil and the erosion hazard on slopes greater than 10 percent.

The Bachus soil is poorly suited to housing and urban development. The main limitations are the depth to bedrock and hazard of erosion on slopes of 10 to 15 percent. Cuts needed to provide essentially level building sites can expose bedrock.

The Clayburn soil is well suited to housing and urban development. It has few limitations.

The Bachus soil is in capability subclass 6E, nonirrigated, and the Clayburn soil is in capability subclass 6E, nonirrigated.

The Bachus soil is in the Loamy range site, 15 to 19E precipitation zone. The Clayburn soil is in the Loamy range site, 15 to 19 E precipitation zone. Included in this unit are areas with a Subirrigated (15 to 19 E) range site on the Moslander soil, and Loamy (15 to 19 E) range site on the Woosley soils.

A typical area of this map unit is located in the N½, Sec. 7, and Sec. 6, T. 40 N., R. 88 W., on the Sioux Pass quadrangle.

Pullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

714--Brownsto-Rentsac, thin complex, 15 to 40 percent slopes. This map unit is on steep, gullied, calcareous sedimentary beds. The native vegetation is mainly short and mid grasses, forbs, sagebrush, and scattered coniferous trees. Elevation is 6,600 to 7,800 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 41 to 43 degrees F, and the average frost-free period is 70 to 100 days.

This unit is 55 percent Brownsto very gravelly loam, 20 to 40 percent slopes; and 30 percent Rentsac, thin cobbly loam, 15 to 30 percent slopes. Brownsto soils are on steep colluvial slopes and Rentsac, thin soils are on ridges.

Included in this unit is about 5 percent deep loamy soils in gully bottoms and 10 percent Rock outcrop on ridges.

The Brownsto soil is deep and well drained. It formed in colluvium derived dominantly from mixed sedimentary sources. Typically, the surface is covered with 20 to 60 percent gravel, channers, and cobbles. The surface layer is brown, calcareous, very gravelly loam about 3 inches thick. The subsurface layer is brown, calcareous, very gravelly loam about 7 inches thick. The substratum to a depth of 60 inches or more is very pale brown, strongly calcareous very cobbly loam.

Permeability of the Brownsto soil is moderately rapid. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is rapid and the hazard of water erosion is high.

The Rentsac, thin soil is shallow and excessively drained. It formed in residuum derived dominantly from mixed sedimentary sources. Typically, the surface is covered with 40 to 80 percent rock fragments. The surface layer is brown, calcareous cobbly loam about 2 inches thick. The substratum is pale brown, calcareous very cobbly loam about 5 inches thick over hard calcareous siltstone. Depth to hard sedimentary bedrock ranges from 5 to 15 inches.

About 5 percent of the soils are similar to the Rentsac, thin soil except that they have hue of 5YR or redder.

Permeability of the Rentsac, thin soil is rapid. Available water capacity is very low. Effective rooting depth is 5 to 15 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Brownsto soil is mainly bluebunch wheatgrass, western wheatgrass, needleandthread, and mutton bluegrass. The present vegetation in most areas is mainly bluebunch wheatgrass, big sagebrush, phlox, and bluegrasses. The production of vegetation suitable for livestock grazing is limited by the low available water capacity of this soil.

The potential plant community on the Rentsac, thin soil is mainly bluebunch wheatgrass, western wheatgrass, and scattered junipers or limber pines. The production of vegetation suitable for livestock grazing is limited by the very shallow depth to bedrock and the very low available water capacity.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Slope limits access by livestock and results in overgrazing of the less sloping areas. Livestock grazing should be managed to protect the unit from excessive erosion. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are steep slopes, high percentage of rock fragments in these soils, and shallow depth to bedrock in the Rentsac, thin soil.

This unit is poorly suited to housing and urban development. The main limitations are steep slopes, depth to bedrock in the Rentsac, thin soil, and the high percentage of rock fragments in these soils.

This map unit is in capability subclass 7S.

The Brownsto soil is in the Shallow Loamy range site, 10 to 14 SE precipitation zone. The Rentsac, thin soil is in the Very Shallow range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Loamy (10 to 14 SE) range site on the deep loamy soils.

A typical area of this map unit is located in the SE¼, SEc. 22, and the SW¼, Sec. 23, T. 40 N., R 89 W., on the Sioux Pass quadrangle.

4/1/82 Revised

ADVANCE DATA
SUBJECT TO CHANGE

801--Bributte gravelly clay loam, 5 to 40 percent slopes. This shallow, well drained soil is on escarpments, knolls, and ridges. It formed in residuum derived dominantly from shale. The native vegetation is mainly short and mid grasses and sedges. Elevation is 5,000 to 6,000 feet. The average annual precipitation is 5 to 9 inches, the average annual air temperature is 45 to 47 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface is covered with 15 to 75 percent gravel and cobbles. The surface layer is grayish brown gravelly clay loam about 3 inches thick. The substratum is grayish brown clay about 8 inches thick over gypsiferous shale. In some areas the surface layer is clay loam. Depth to shale ranges from 5 to 20 inches.

Included in this unit is about 10 percent Greybull clay loam in swales and drainageways and 10 percent clay loams less than 5 inches deep.

Permeability of this Bributte gravelly clay loam soil is slow. Available water capacity is very low. Effective rooting depth is 5 to 20 inches. Runoff is rapid and the hazard of water erosion is severe.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly bluebunch wheatgrass, western wheatgrass, prairie junegrass, and threadleaf sedge. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to shale. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. This soil responds well to fertilizer, to range seeding, and to proper grazing use. Slope limits access by livestock and results in overgrazing of the less sloping areas. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This unit is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are the lack of irrigation water, the gravelly and cobbly surface layer, and depth to shale.

This unit is very poorly suited to housing and urban development. The main limitations are the shrink-swell potential, the depth to shale, and slope.

This map unit is in capability subclass 7E.

Shallow Loamy (NP) range site, 5- to 9-BH. Included in this unit are areas with a Loamy range site on the Greybull soil, and Shale range site on the very shallow clay loam soils.

A typical area of this map unit is located in the E½ of section 16, T. 38 N., R. 85 W., on the Three Buttes quadrangle.

Natrona Co - Pullen, Ann
Revised 4/1/82

ADVANCE DATA
SUBJECT TO CHANGE

802--Bessemer sandy loam, 1 to 10 percent slopes. This deep, well drained soil is on undulating plains. It formed in alluvium derived dominantly from sandstone and shale. The native vegetation is mainly short and midgrasses and shrubs. Elevation is 5,500 to 6,500 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F, and the average frost-free period is 90 to 110 days.

Typically, the surface layer is brown sandy loam about 2 inches thick. The subsoil is yellowish brown clay loam about 11 inches thick. The substratum to a depth of 40 inches or more is pale brown very gravelly sandy clay loam.

Included in this unit are small areas of Absted sandy loam and Forkwood sandy loam in swales. Included areas make up about 15 percent of the total acreage.

Permeability of this Bessemer soil is moderately slow. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is slight.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly western wheatgrass, needleandthread, prairie junegrass, and big sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases and the

proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. If the shrubs are managed to create open areas, this produces a good stand of desirable grasses and forbs.

This unit is poorly suited to hay and pasture. The main limitations are lack of irrigation water and the undulating slopes.

If this unit is used for housing and urban development, the main limitations are shrink-swell potential and slow permeability.

Loamy range site, 10 to 14 NP precipitation zone.

This map unit is in capability subclass 4E.

A typical area of this map unit is located in Secs. 19 and 20, T. 37 N., R. 85 W. on the Notches Dome quadrangle.

4/82
Pullen

ADVANCE DATA
SUBJECT TO CHANGE

804--Neldore Variant-Rock outcrop complex, 3 to 10 percent slopes. This map unit is on cuesta dip slopes. The native vegetation is mainly short and mid grasses and sagebrush. Elevation is 6,000 to 7,000 feet. MAP is 10 to 14 inches, MAAT is 45 to 47 degrees F., and the FFS is 90 to 110 days.

This unit is 60 percent Neldore Variant very channery clay loam and 20 percent Rock outcrop. The Neldore Variant soil is on plane slopes and Rock outcrop is on ridges and escarpments.

Included in this unit is about 10 percent Neldore clay loam on concave slopes and 10 percent very shallow clayey soils on convex slopes. Included areas make up about 20 percent of the total acreage.

The Neldore Variant soil is shallow and well drained. It formed in residuum derived dominantly from Mowry and Thermopolis Shale. Typically, the surface is covered with 30 to 70 percent channers. The surface layer is brown very channery clay loam about 2 inches thick. The subsurface layer is brown channery clay about 3 inches thick. The substratum is brown extremely channery clay about 7 inches thick over shale interbedded with fractured slate. In some areas the surface layer is channery sandy clay loam. Depth to bedrock ranges from 10 to 20 inches.

Permeability of the Neldore Variant very channery clay loam soil is ~~very~~ slow. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is ~~slow~~ medium and the hazard of water erosion is moderate.

Rock outcrop is comprised of shale and slate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Neldore Variant soil is mainly bluebunch wheatgrass, Sandberg bluegrass, western wheatgrass, and needleandthread. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. Livestock grazing should be managed to protect the soil from excessive erosion. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

This unit is very poorly suited to hay and pasture. The main limitations are the very channery surface layer, depth to bedrock, and lack of irrigation water.

This unit is very poorly suited to housing and urban development. The main limitations are depth to bedrock.

This unit is in capability class 8.

Shallow Loamy range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Shallow Loamy (10 to 14 SE) range site on the Neldore clay loam, and Very Shallow (10 to 14 SE) range site on the very shallow clayey soils.

A typical area of this map unit is located in Secs. 22 and 28, T. 39 N., R. 85 W. on the Three Buttes quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

805--Rock outcrop-Neldore Variant complex, 10 to 60 percent slopes. This map unit is on cuesta scarps. The native vegetation is mainly mid-grasses, shrubs, and conifers. Elevation is 6,000 to 7,000 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F, and the average frost-free period is 80 to 100 days.

This unit is 50 percent Rock outcrop and 35 percent Neldore Variant very channery clay loam. The Rock outcrop and Neldore Variant are intermingled on steep slopes of 25 to 60 percent.

Included in this unit are small areas of shallow calcareous clay loams on toeslopes of 10 to 25 percent. Included areas make up about 15 percent of the total acreage.

The Neldore Variant very channery clay loam soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the surface is covered with 50 to 70 percent channers. The surface layer is very dark grayish brown very channery clay loam about 3 inches thick. The substratum is very dark grayish brown extremely channery clay loam about 4 inches thick over noncalcareous Thermopolis Shale. Depth to shale ranges from 6 to 20 inches.

Permeability of the Neldore Variant soil is very slow. Available water capacity is very low. Effective rooting depth is 6 to 20 inches. Runoff is rapid and the hazard of water erosion is severe.

Rock outcrop is Mowry and Thermopolis Shale.

This unit is used for wildlife habitat.

The potential plant community on the Neldore Variant soil is mainly bluebunch wheatgrass, big sagebrush, mountainmahogany, and limber pine.

The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. Slope limits access by livestock and results in overgrazing of the less sloping areas. Livestock grazing should be managed to protect the soil from excessive erosion. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This is limited for livestock watering ponds and other water impoundments because of the seepage potential.

The Neldore Variant soil is poorly suited to hay and pasture. The main limitations are the steep slopes and the depth to shale.

This unit is poorly suited to the production of limber pine. The main concerns in producing and harvesting timber are low annual precipitation and the severe erosion hazard.

The Neldore Variant soil is poorly suited to housing and urban development. The main limitations are the steep slopes and the depth to bedrock.

This map unit is in capability subclass 7S.

The Neldore Variant soil is in the Very Shallow range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Shallow Loamy (10 to 14 SE) range site on the shallow calcareous clay loams, and range site on the .

A typical area of this map unit is located in Sec. 29, T. 39 N., R. 85 W., on the Three Buttes Quadrangle.

Ann
4/1/82 Revised

ADVANCE DATA
SUBJECT TO CHANGE

806--Patent-Blazon complex, 3 to 15 percent slopes. This map unit is on uplifted shale and sandstone beds partially covered with loess. The native vegetation is mainly short and mid grasses and sedges. Elevation is 6,000 to 6,700 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F, and the average frost-free period is 90 to 110 days.

This unit is 60 percent Patent very fine sandy loam and 20 percent Blazon fine sandy loam. The Patent soil is on fans and in swales, and the Blazon soil is on knolls and ridges.

Included in this unit is about 10 percent Rentsac gravelly sandy loam on knolls and ridges; 5 percent deep, very strongly alkaline loams on fans and in swales; and 5 percent Rock outcrop on knolls and ridges.

Rock outcrop is sandstone of the Sundance formation.

The Patent soil is deep and well drained. It formed in eolian material derived dominantly from mixed sources. Typically, the surface layer is brown very fine sandy loam about 4 inches thick. The substratum to a depth of 60 inches or more is brown loam.

Permeability of the Patent soil is rapid. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is slight.

The Blazon soil is shallow and well drained. It formed in loamy residuum derived dominantly from sandstone. Typically, the surface layer is dark brown fine sandy loam about 4 inches thick. The substratum is light olive brown loam about 6 inches thick over weathered Sundance sandstone. Depth to bedrock ranges from 6 to 20 inches.

Permeability of the Blazon soil is rapid. Available water capacity is very low. Effective rooting depth is 6 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat and recreation.

The potential plant community on the Patent soil is mainly needleandthread, prairie junegrass, Indian ricegrass, and western wheatgrass. If the shrubs are managed to create open areas, this soil produces a good stand of desirable grasses and forbs.

The potential plant community on the Blazon soil is mainly bluebunch wheatgrass, western wheatgrass, and needleandthread. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. Livestock grazing should be managed to protect the soil from excessive erosion. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment.

This unit is poorly suited to hay and pasture. The main limitations are the lack of irrigation water.

This unit is fairly well suited to urban and housing development. The main limitations are small areas of shallow soils and Rock outcrop.

This map unit is in capability subclass 6E, nonirrigated.

The Patent soil is in the Loamy (NP) range site, 10- to 14-inch precipitation zone. The Blazon soil is in the Shallow Loamy (NP) range site, 10- to 14-inch precipitation zone.

A typical area of this map unit is located in sections 17 and 18, T. 39 N., R. 85 W., on the three Buttes quadrangle.

Garfield
4/82
Pullen

ADVANCE DATA
SUBJECT TO CHANGE

810--Sinkson loam, 0 to 6 percent slopes. This deep, well drained soil is on alluvial fans and low terraces. It formed in alluvium derived dominantly from red sandstone. The native vegetation is mainly short and mid grasses and sagebrush. Elevation is 6,000 to 6,800 feet. The average annual precipitation is 10 to 14 inches, the average annual air temperature is 45 to 47 degrees F, and the average frost-free period is 90 to 110 days.

Typically, the surface layer is yellowish red loam about 3 inches thick. The subsoil is yellowish red loam about 10 inches thick. The substratum to a depth of 60 inches or more is reddish brown fine sandy loam derived from Chugwater Sandstone. In some areas the surface layer is fine sandy loam. Some of the soils are similar to Sinkson except that they have thin dicontinous gravel layers.

Included in this unit is about 5 percent Brownsto gravelly loams on knolls and ridges, 5 percent shallow very gravelly sandy loams on knolls and ridges, and 5 percent Rock outcrop on ridges. Included areas make up about 15 percent of the total acreage.

Permeability of this Sinkson loam soil is rapid. Available water capacity is high. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of water erosion is ~~moderate~~ severe. The hazard of soil blowing is high.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly western wheatgrass, needleandthread, Indian ricegrass, and big sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. If the shrubs are managed to create open areas, this soil produces a good stand of desirable grasses and forbs.

III If this unit is used for hay and pasture, the main limitations ~~This unit is well suited to hay and pasture. It has few limitations.~~ are the severe erosion hazard when disturbed.

If this unit is used for housing and urban development, the main limitations are the severe erosion hazard.

This map unit is in capability subclasses 4E, irrigated, and 4E, nonirrigated.

Loamy range site, 10 to 14 SE precipitation zone. Included in this unit are areas with a Shallow Loamy, 10 to 14 SE range site on the shallow, very gravelly sandy loams and the Brownsto soils.

A typical area of this map unit is located Secs. 7 and 8, T. 39 N., R. 85 W. on the Three Buttes quadrangle.

Revised 4/1/82

ADVANCE DATA
SUBJECT TO CHANGE

815--Moran-Rock outcrop complex, 10 to 40 percent slopes. This map unit is in forested mountain canyons where snow accumulates to a great depth. The native vegetation is mainly tress, forbs, and grasses. Elevation is 7,800 to 9,000 feet. The average annual precipitation is greater than 19 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 60 percent Moran cobbly loam and 20 percent igneous Rock outcrop. The Moran soil is on canyon slopes of 10 to 40 percent, and Rock outcrop is on ridgetops and canyon slopes of 25 to 40 percent.

Included in this unit is about 10 percent shallow very cobbly loams on steep, convex side slopes and ridges and 10 percent subirrigated poorly drained loams in drainageways .

The Moran loam soil is deep and well drained. It formed in colluvium and residuum derived dominantly from igneous rock. Typically, the surface is covered with 15 to 50 percent cobbles, stones, and boulders. The surface layer is dark brown loam about 3 inches thick. The subsoil is brown very cobbly loam about 8 inches thick. The substratum to a depth of 40 inches or more is yellowish brown very cobbly loam.

Permeability of the Moran soil is moderate. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid and the hazard of water erosion is moderate.

This unit is used mainly for wildlife habitat. It is also used for rangeland.

The potential plant community on the Moran soil is mainly lodgepole pine, Douglas-fir, subalpine fir, and Indian ricegrass.

This unit is very poorly suited to hay and pasture. The main limitations are steep slopes, short frost-free season, and dense forest.

This unit is suited to the production of lodgepole pine, subalpine fir, and Douglas-fir. Stones on the surface can interfere with felling, yarding, and other operations involving the use of equipment.

If this unit is used for housing and urban development, the main limitations are slopes and stoniness.

This map unit is in capability subclass 7S, nonirrigated.

The Moran soil is a woodland site.

Included in this unit are areas with a subirrigated range site on the poorly drained loams~~, and range site on the .~~

A typical area of this map unit is located in the N½ of section 3, R. 87 W., T. 40 N., on the Badwater NE quadrangle.

Pueblo
4/62

816--Cabin-Irigul Variant complex, 6 to 40 percent slopes. This map unit is on mountainsides and ridges over igneous and gneiss bedrock. The native vegetation is mainly short, mid, and tall grasses and sedges. Elevation is 7,600 to 9,000 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 60 percent Cabin loam, 6 to 30 percent slopes; and 30 percent Irigul Variant very cobbly sandy loam, 15 to 40 percent slopes. The Cabin soil is on mountainsides; and the Irigul Variant soil is on knolls, ridges, and steep mountainsides.

Included in this unit is about 5 percent Clayburn loam on the lower slopes, in draws, and adjacent to drainageways; a small percentage of poorly drained loamy soils in drainageways, and 5 percent Rock outcrop on ridges and steep slopes. Rock outcrop is mostly basalt, but in some areas it is granite or gneiss.

The Cabin loam soil is deep and well drained. It formed in alluvium and residuum derived dominantly from igneous rock. Typically, the surface layer is dark brown loam about 2 inches thick. The upper 8 inches of the subsoil is dark brown sandy clay loam. The lower 4 inches is yellowish brown gravelly sandy clay loam. The substratum to a depth of 60 inches or more is layers of dark grayish brown loamy sand and olive brown very gravelly loamy sand.

Permeability of the Cabin loam soil is moderate to a depth of 20 inches and very rapid below this depth. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is rapid and the hazard of water erosion is severe.

The Irigul Variant very cobbly sandy loam soil is shallow and somewhat excessively drained. It formed in residuum derived dominantly from gneiss. Typically, the surface is covered with 30 to 60 percent gravel and cobbles. The surface layer is dark brown very cobbly sandy loam about 5 inches thick. The subsurface layer is very dark grayish brown gravelly sandy loam about 10 inches thick. Soft weathered gneiss is at a depth of 15 inches. In some areas the surface layer is gravelly sandy clay loam. Depth to weathered bedrock ranges from 8 to 20 inches. Some of the soils are similar to Irigul Variant except that they have less than 35 percent rock fragments or they overlie hard bedrock.

Permeability of the Irigul Variant very cobbly sandy loam soil is rapid. Available water capacity is very low. Effective rooting depth is 8 to 20 inches. Runoff is rapid and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Cabin soil is mainly Idaho fescue, columbia needlegrass, spike fescue, and needleandthread. The present vegetation in most areas is mainly Idaho fescue, bluebunch wheatgrass, prairie junegrass, and bluegrass.

The potential plant community on the Irigul Variant soil is mainly columbia needlegrass, Idaho fescue, bluebunch wheatgrass, and western wheatgrass. The production of vegetation suitable for livestock grazing is limited by the very low available water capacity and depth to bedrock. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community.

This unit is very poorly suited to hay and pasture. The main limitations are ~~the short frost-free season.~~ [illegible]

This unit is very poorly suited to housing and urban development. The main limitations are ~~the high seepage potential of the Cabin soil and the steep slopes and depth to bedrock of the Irigul Variant soil.~~ [illegible]

This map unit is in capability subclass 6E.

The Cabin soil is in the Shallow Loamy range site, 15 to 19E rangeland resource area. The Irigul Variant soil is in the Shallow Igneous range site, 15 to 19E rangeland resource area. Included in this unit are areas with a Loamy (15 to 19E) range site on the Clayburn soil, and Subirrigated (15 to 19E) range site on the ~~wet~~ [illegible] loamy soils.

A typical area of this map unit is located in Secs. 22 and 27, T. 40 N., R. 87 W., on the Badwater NE quadrangle.

65: D-8
Pullen
4/82

ADVANCE DATA
SUBJECT TO CHANGE

903--Bachus Variant-Forsey Variant complex, 4 to 20 percent slopes. This map unit is on sandstone cuestas. The native vegetation is mainly short and mid grasses, shrubs, and some coniferous trees. Elevation is 7,500 to 9,000 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 45 percent Bachus Variant loam and 30 percent Forsey Variant very flaggy clay loam. The Bachus Variant soil is on lower dip slopes, and the Forsey Variant is on upper dip slopes.

Included in this unit is about 15 percent Nielsen sandy loam on upper dip slopes and ridges, 5 percent deep flaggy clay soils on lower dip slopes and in swales, and 5 percent sandstone ~~on~~ Rock outcrop on ridges.

The Bachus Variant soil is deep and well drained. It formed in residuum derived dominantly from quartizitic sandstone. Typically, the surface layer is very dark grayish brown loam about 5 inches thick. The upper 15 inches of the subsoil is dark brown loam overlying gravelly clay loam. The lower 11 inches is dark grayish brown or dark brown very cobbly clay loam. The upper 6 inches of the substratum is yellowish brown very cobbly clay loam. The lower part to a depth of 5 inches is yellowish brown extremely cobbly clay loam. Quartizitic sandstone is at a depth of 42 inches.

Permeability of the Bachus Variant soil is moderate. Available water capacity is medium. Effective rooting depth is 40 to 50 inches. Runoff is medium and the hazard of water erosion is moderate.

The Forsey Variant soil is moderately deep and well drained. It formed in residuum derived dominantly from quartizitic sandstone. Typically, the surface layer is very dark grayish brown flaggy loam about 6 inches thick. The upper 5 inches of the subsoil is very dark grayish brown very flaggy clay loam. The lower 16 inches is dark yellowish brown very flaggy clay loam. The substratum is yellowish brown very flaggy clay loam about 12 inches thick over fractured quartizitic sandstone at 39 inches. Permeability of the Forsey Variant soil is moderate. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on the Bachus Variant soil is mainly Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, and big sagebrush. If the shrubs are managed to create open areas, this soil produces a good stand of desirable grasses and forbs.

The potential plant community on the Forsey Variant soil is mainly Idaho fescue, prairie junegrass, western wheatgrass, and big sagebrush. Loss of the surface layer results in a severe decrease in productivity and in the potential of the soil to produce plants suitable for grazing. This soil is limited for livestock watering ponds and other water impoundments because of the seepage potential.

If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment.

This unit is very poorly suited to hay and pasture. The use of equipment is limited by flagstones, a short frost-free season on the surface, and by slope.

If this unit is used for housing and urban development, the main limitations are large stones and low stability of cuts. Cuts needed to provide essentially level building sites can expose bedrock.

This map unit is in capability unit 6E.

The Bachus Variant soil is in the Loamy range site, 15 to 19 E precipitation zone. The Forsey Variant soil is in the Shallow Loamy range site, 15 to 19 E precipita tion zone. Included in this unit are areas with a Shallow Loamy (15 to 19 E) range site on the Nielsen sandy loam, and Loamy (15 to 19 E) range site on the deep flaggy clay soils.

A typical area of this map unit is located in the NW¼ of Sec. 10, T. 40 N., R. 88 W., on Sioux Pass quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

904--Inchau Variant-Pagosa association, undulating to rolling. This map unit is on dip slopes of hard sandstone cuestas. Slope is 3 to 20 percent. The native vegetation is mainly mid and tall grasses, shrubs and coniferous trees. Elevation is 8,000 to 9,000 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is about 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 50 percent Inchau Variant loam and 30 percent Pagosa clay loam. The Inchau soil is in open meadow areas with large boulders and Pagosa is in the woodland areas.

Included in this unit is about 10 percent very stoney clay soils under coniferous trees and 10 percent Flathead sandstone Rock outcrop on ridges.

The Inchau Var. soil is moderately deep and well drained. It formed in alluvium and residuum derived dominantly from quartizitic sandstone. Typically, the surface is covered with 20 percent boulders. The surface layer is dark brown loam about 4 inches thick. The subsoil is dark yellowish brown loam about 21 inches thick. Fractured quartizitic sandstone is at a depth of 25 inches.

Permeability of the Inchau Variant is moderate. Available water capacity is low. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate.

The Pagosa clay loam soil is deep and well drained. It formed in residuum derived dominantly from quartizitic sandstone. Typically, the surface is covered with a mat of ~~practically~~ partially decomposed pine needles about 2 inches thick. The surface layer is very dark grayish brown clay loam about 7 inches thick. The subsurface layer is pale brown clay loam about 8 inches thick. The next layer is a mixed layer of the subsurface and the subsoil, and is pale brown and light brown very cobbly clay loam about 12 inches thick. The subsoil is light, brown cobbly clay about 4 inches thick. The substratum to a depth of 40 inches or more is brown cobbly clay.

Permeability of the Pagosa clay loam soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 40 to 60 inches. Runoff is medium and the hazard of water erosion is slight.

Most areas of this unit are used for rangeland and wildlife habitat. A few areas are used for wood products.

The potential plant community on the Inchau Var. is mainly Columbia needlegrass, Idaho fescue, bluebunch wheatgrass, and big sagebrush. The production of vegetation suitable for livestock grazing is limited by large boulders on the surface. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Mechanical treatment is not practical because the surface is stony and the slopes are steep.

The Inchau Var. is very poorly suited to hay and pasture. The use of equipment is limited by boulders on the surface, and short frost-free season ~~on the surface~~ and by slope.

The Inchau Var. soil is poorly suited to housing and urban development. The main limitations are large boulders on the surface. Cuts needed to provide essentially level building sites can expose bedrock.

The Pagosa soil is fairly well suited to the production of ponderosa pine. The main concerns in producing and harvesting timber are slow regrowth.

The Pagosa soil is poorly suited to housing and urban development. Buildings and roads should be designed to offset the effects of shrinking and swelling. Cuts needed to provide essentially level building sites can expose bedrock.

This map unit is in capability unit 6E.

The Inchau Var. is in the loamy range site, 15-19E precipitation zone. The Pagosa soil is in a woodland site. A typical area of this map unit is located in the S½ of Sec. 13, and N½ of Sec. 24, T. 40 N., R. 87 W., on the Grave Springs quadrangle.

ADVANCE DATA
SUBJECT TO CHANGE

908--Chittum-Nielsen-Rock outcrop complex, 2 to 10 percent slopes. This map unit is on rolling ridges. The native vegetation is mainly short and mid grasses and shrubs. Elevation is 7,700 to 9,000 feet. The average annual precipitation is 15 to 19 inches, the average annual air temperature is 40 degrees F, and the average frost-free period is less than 60 days.

This unit is 40 percent Chittum loam, 30 percent Nielsen loam, and 15 percent quartzitic sandstone. The Chittum loam, Nielsen loam, and Rock outcrop are intermingled on ridges.

Included in this unit is about 10 percent Bachus loam in swales below the ridges and 5 percent shallow loamy soils underlain by soft sandstone.

The Chittum loam soil is shallow and well drained. It formed in residuum derived dominantly from hard sandstone. Typically, the surface layer is dark brown loam about 2 inches thick. The upper 10 inches of the subsoil is dark brown loam. The lower 8 inches is yellowish brown clay loam. Hard sandstone is at a depth of 20 inches.

Permeability of the Chittum soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

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The Nielsen loam soil is shallow and well drained. It formed in residuum derived dominantly from hard sandstone. Typically, the surface layer is dark grayish brown loam about 2 inches thick. The subsoil is dark grayish brown very cobbly clay loam about 6 inches thick. The substratum is 4 inches thick over hard sandstone.

Permeability of the Nielsen soil is moderate. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium and the hazard of water erosion is moderate.

The Rock outcrop occurs in low outcroppings of Flathead sandstone.

This unit is used mainly for rangeland. It is also used for wildlife habitat.

The potential plant community on this unit is mainly Idaho fescue, western wheatgrass, prairie junegrass, and big sagebrush. If the range is overgrazed, the proportion of preferred forage plants decreases and the proportion of less preferred forage plants increases. Therefore, livestock grazing should be managed so that the desired balance of preferred species is maintained in the plant community. Brush management improves deteriorated areas of range that are producing more woody shrubs than were present in the potential plant community. Areas that are heavily infested with undesirable plants can be improved by chemical or mechanical treatment. Loss of the surface layer results in a severe decrease in productivity and in the potential of the unit to produce plants suitable for grazing.

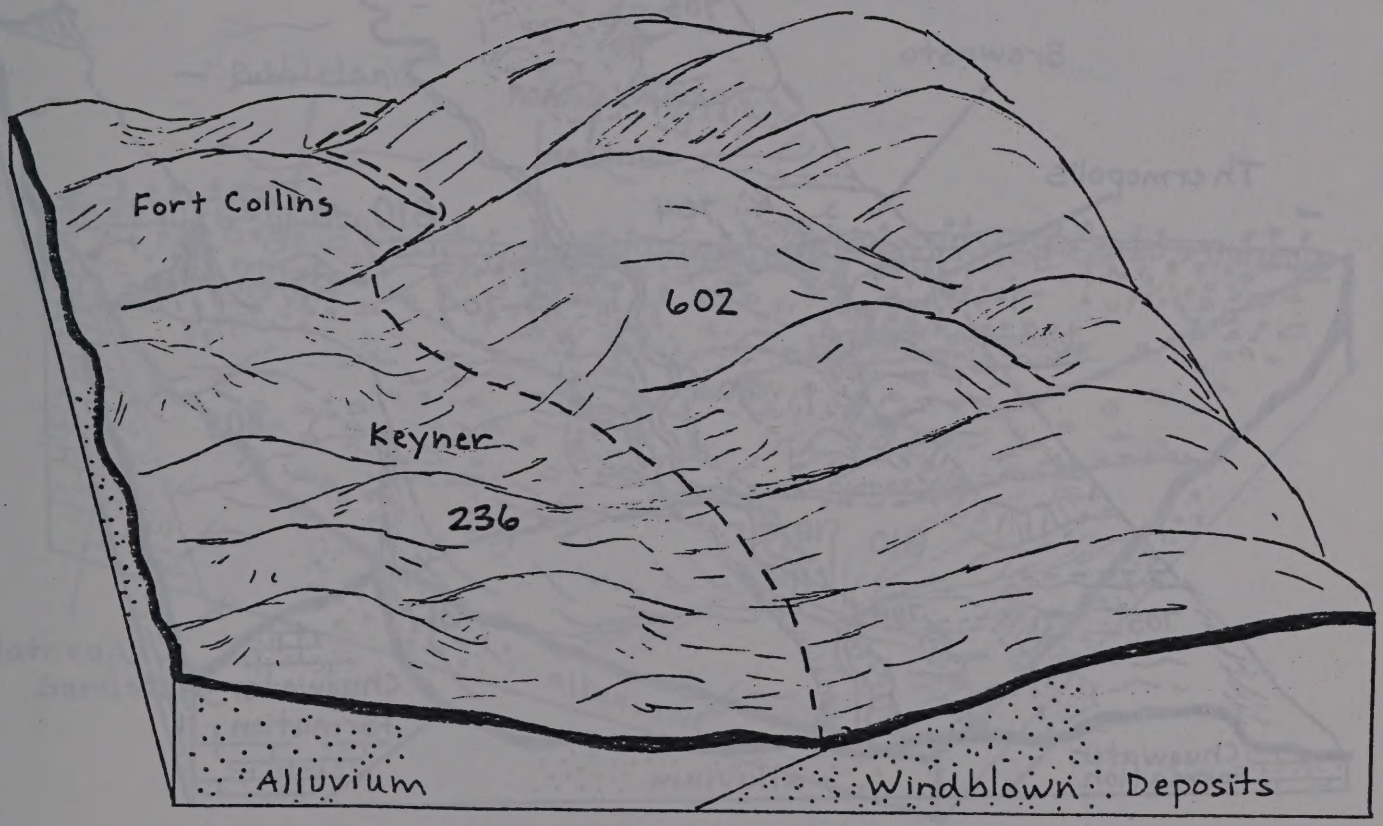
This unit is very poorly suited to hay and pasture. The main limitations are large stones, depth to rock, and a short frost-free season.

This unit is poorly suited to housing and urban development. The main limitations are large stones and depth to rock. Cuts needed to provide essentially level building sites can expose bedrock.

This map unit is in capability unit 7E.

The Chittum soil is in the Shallow Loamy range site, 15 to 19 E precipitation zone. | The Nielsen soil is in the Very Shallow range site, 15 to 19 E precipitation zone. | Included in this unit are areas with a Loamy (15 to 19 E) range site on the Bachus loam, and Shallow Loamy (15 to 19 E) range site on the shallow loamy soils underlain by soft sandstone.

A typical area of this map unit is located in the SE$\frac{1}{4}$ of Sec. 18, and N$\frac{1}{2}$ of Sec. 19, T. 40 N., R. 86 W., on Grave Springs quadrangle.



Block diagram illustrating the positions of units 236 and 602

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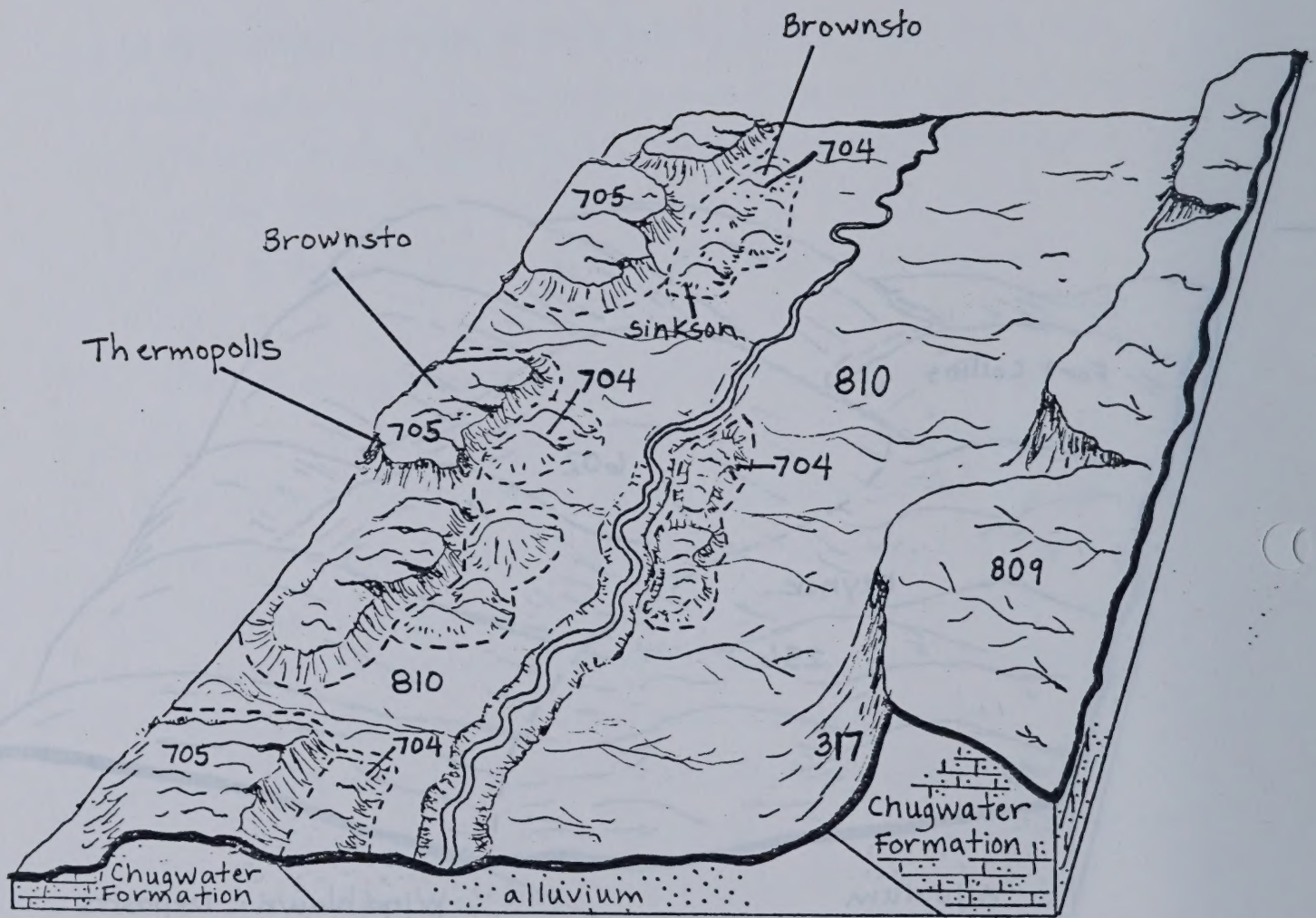

Block diagram illustrating the positions of units 317, 704, 705, 809, and 810.

The components of units 317 and 809 are so intricately intermingled that they cannot be separated at this scale.

3/82 AP

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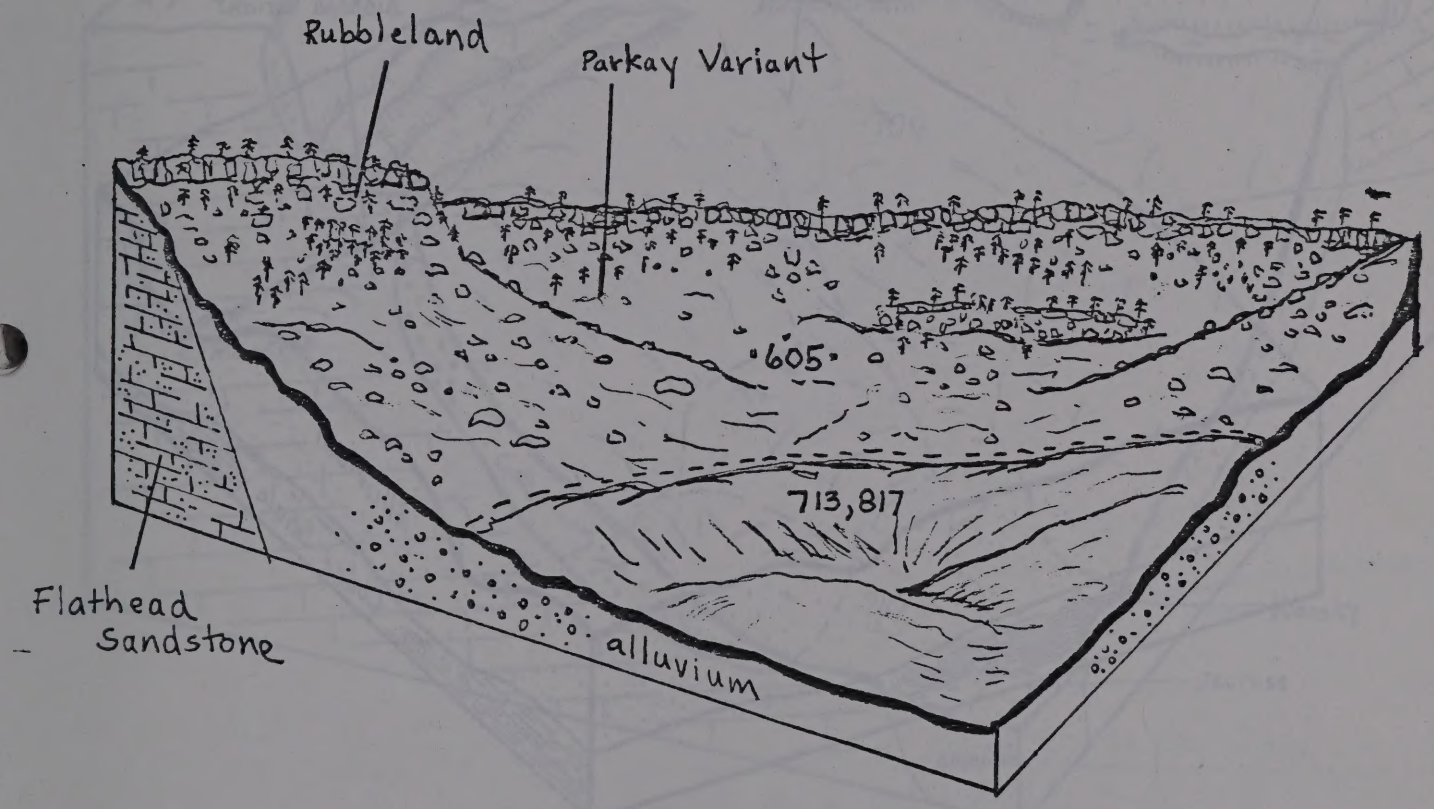

Block diagram illustrating the position of unit 605.

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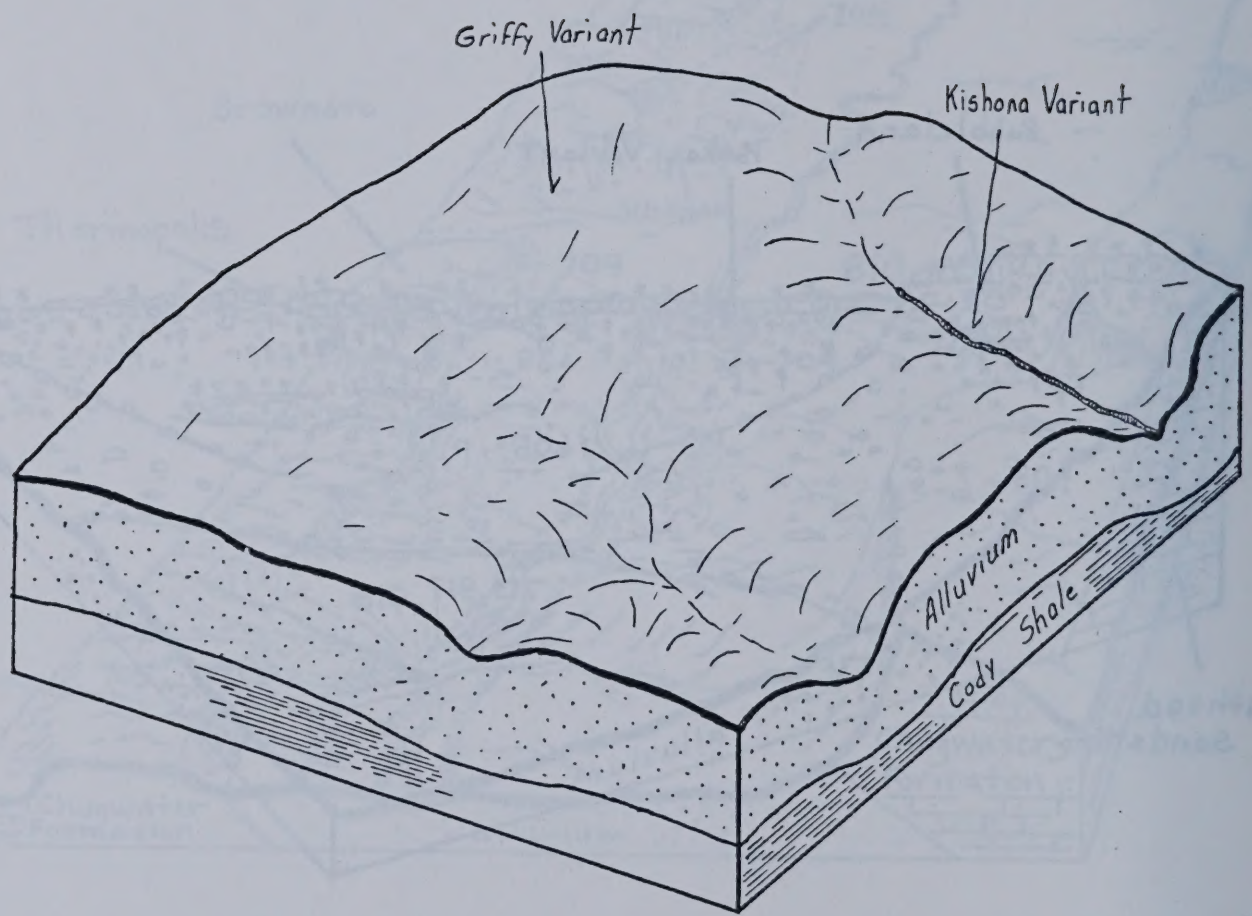
J.W.W.



Block diagram illustrating unit 701.

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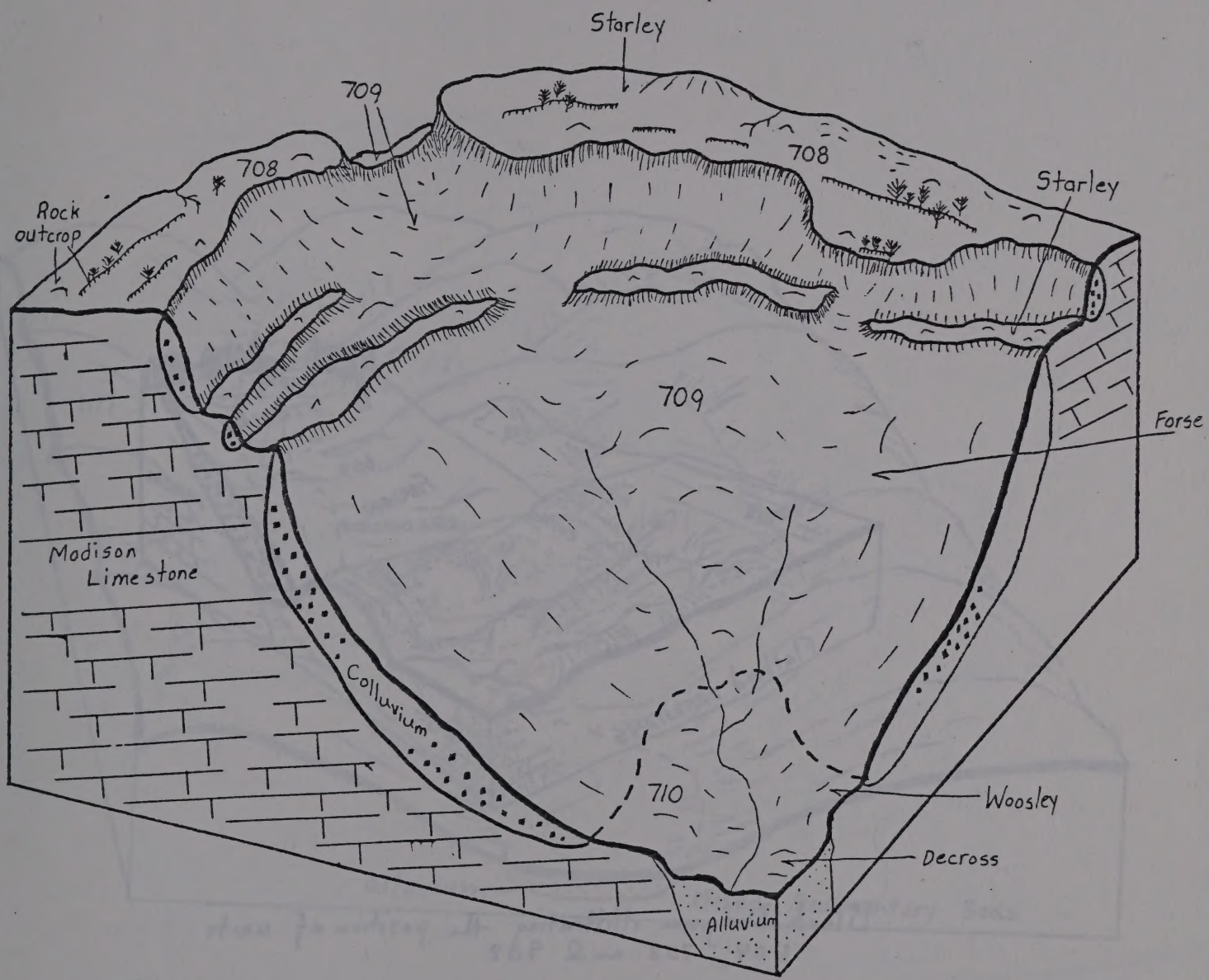
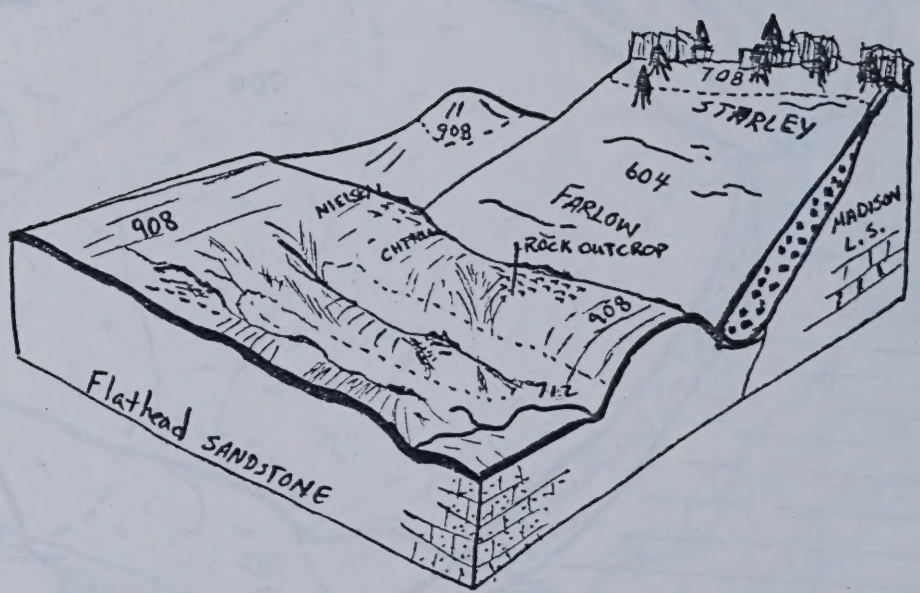


Block diagram illustrating the positions of units 708, 709, and 710, and the component soils of each units.

3/82 SEA



Block Diagram illistrating the position of units 604, 708 and 908

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Soil Conservation Service

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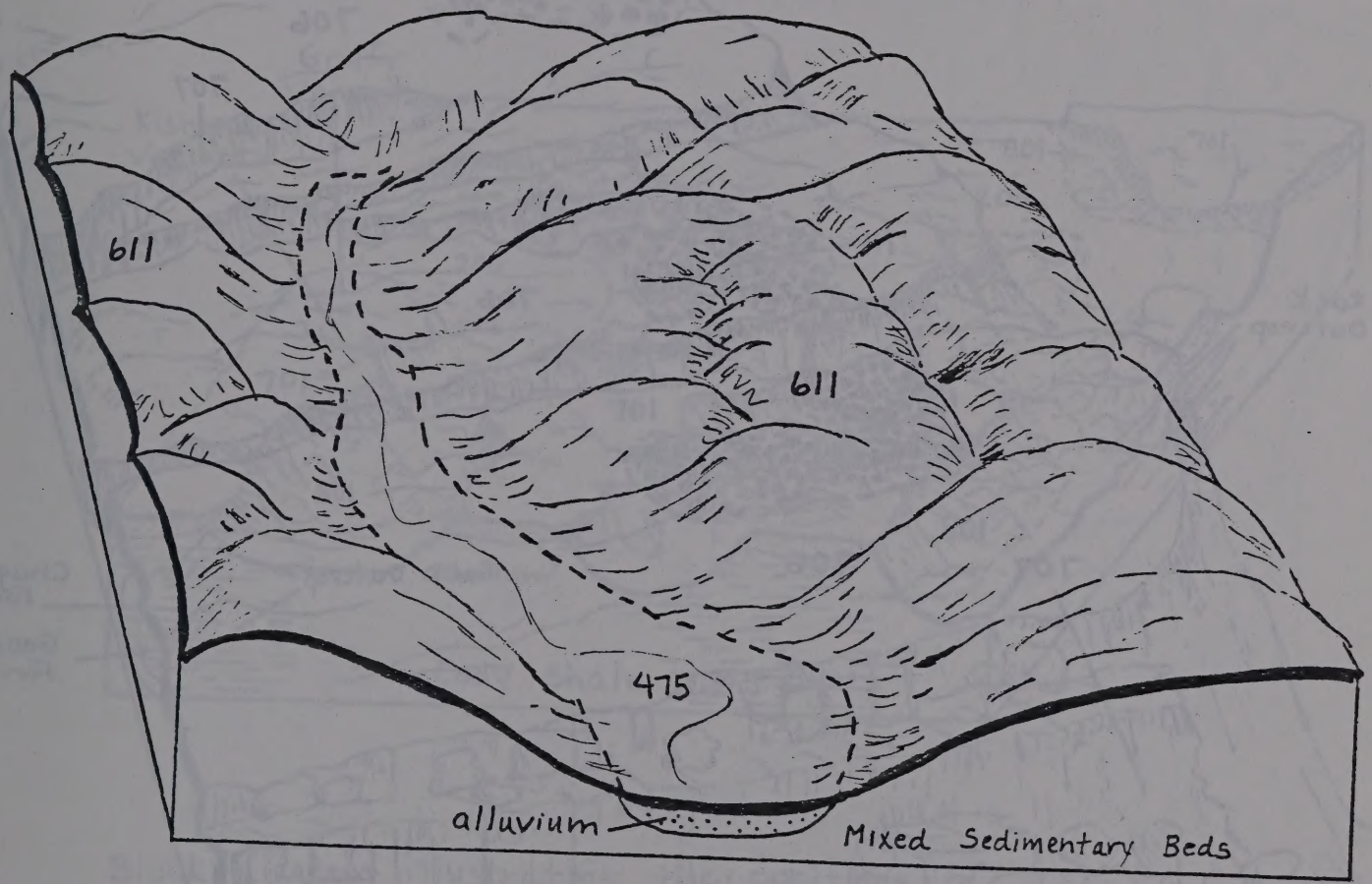

Block diagram illustrating the position of unit 611

The Boettcher and Brownsto soils are intermixed on hillsides.

3/82 AP

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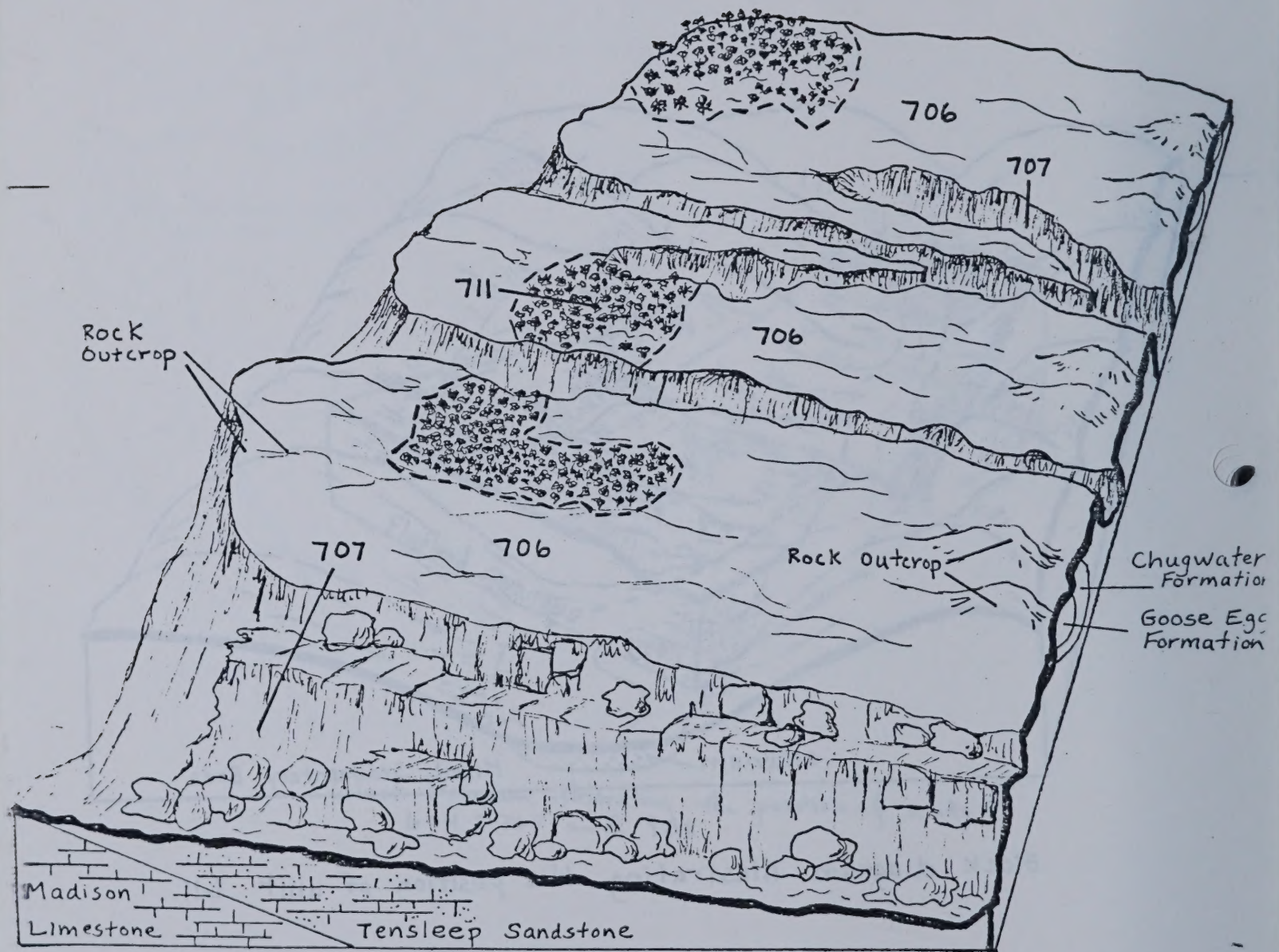
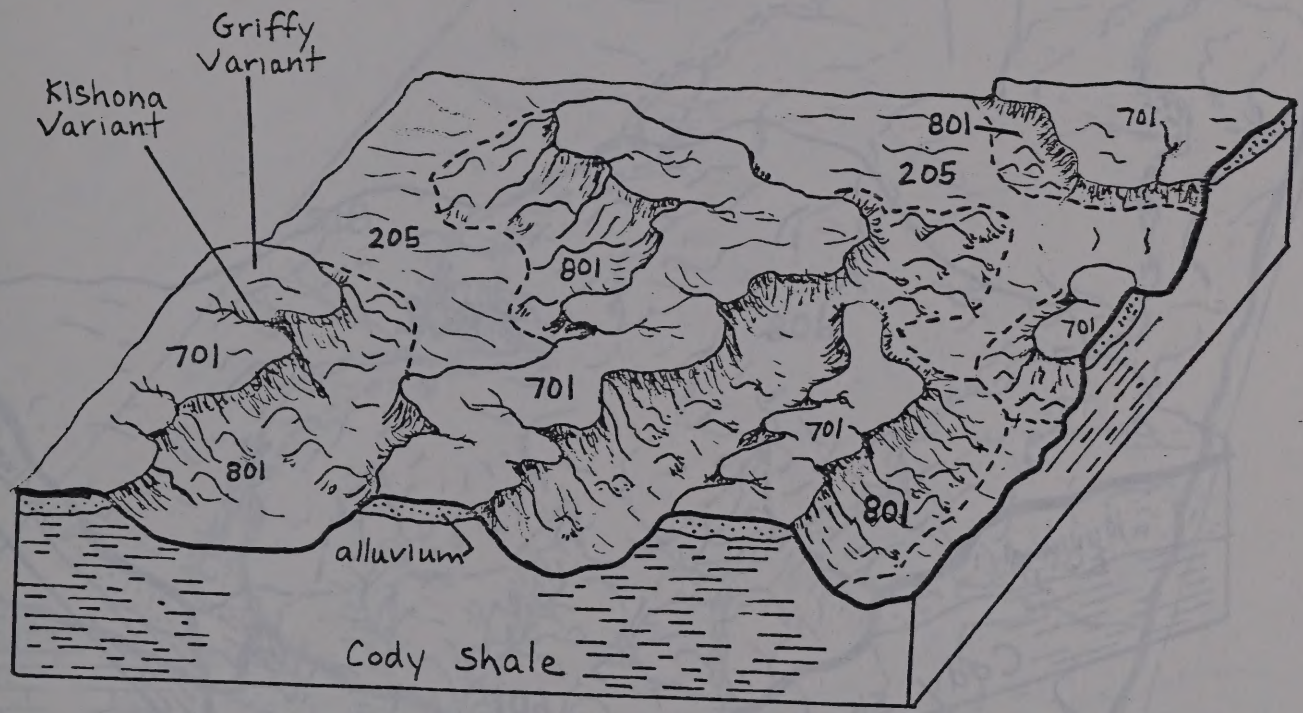


Block diagram illustrating the positions of units 706, 707, and 711

The components of these units are so intricately intermingled that they cannot be separated at this scale.



Block diagram illustrating the positions of units 701 and 801.

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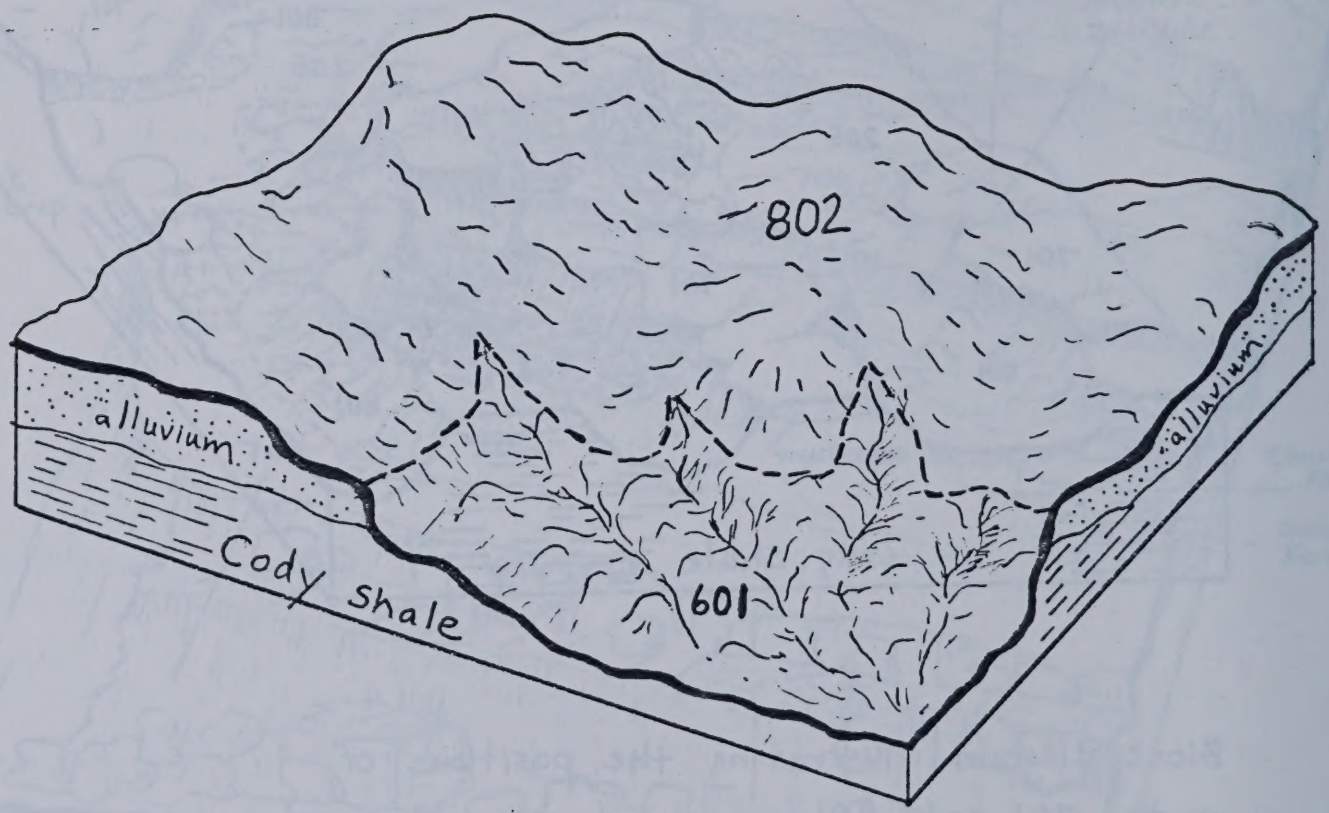

Block diagram illustrating the positions of units 601 and 802.

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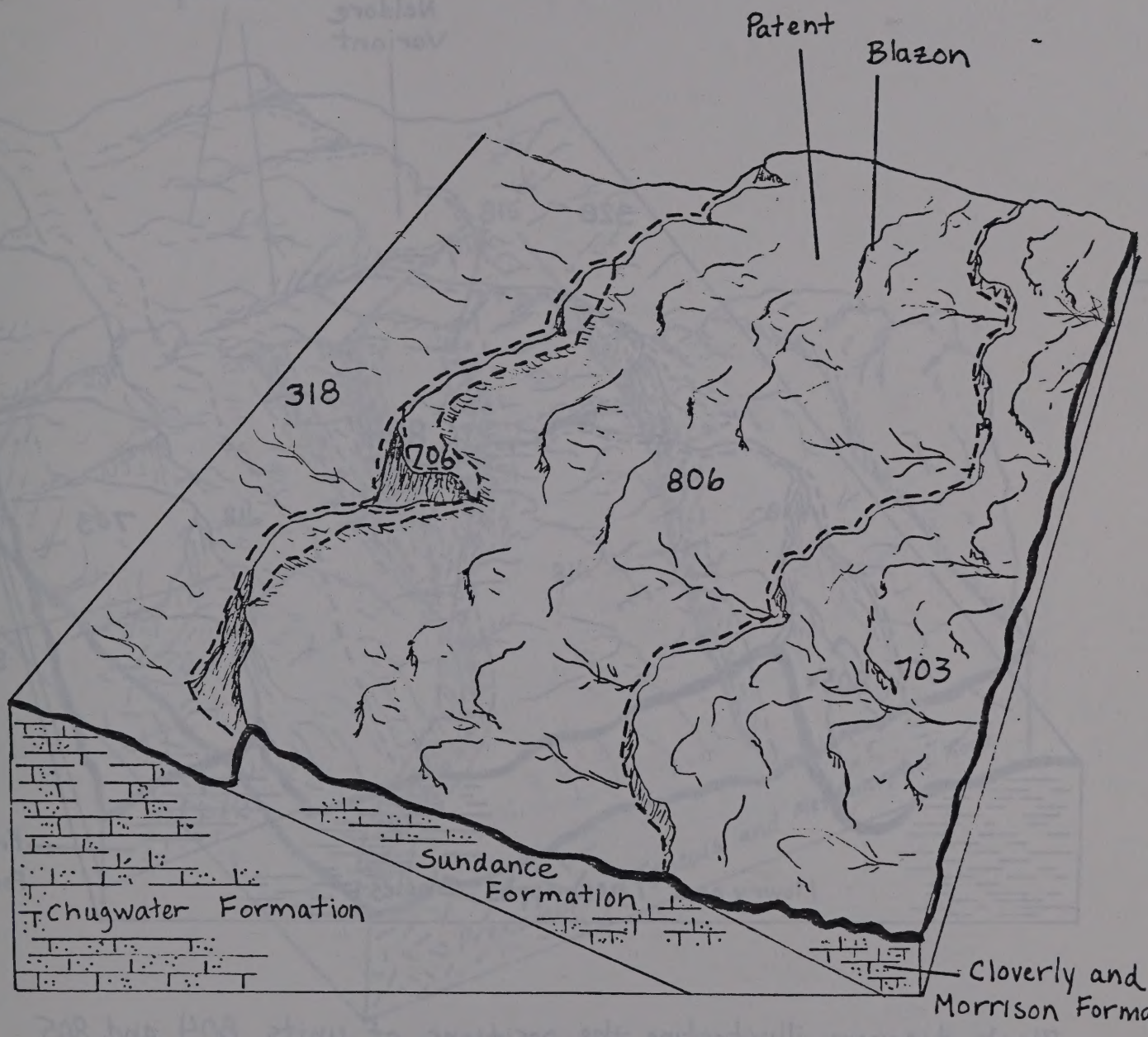

Block diagram illustrating the position of unit 806 and its relationship to other units.

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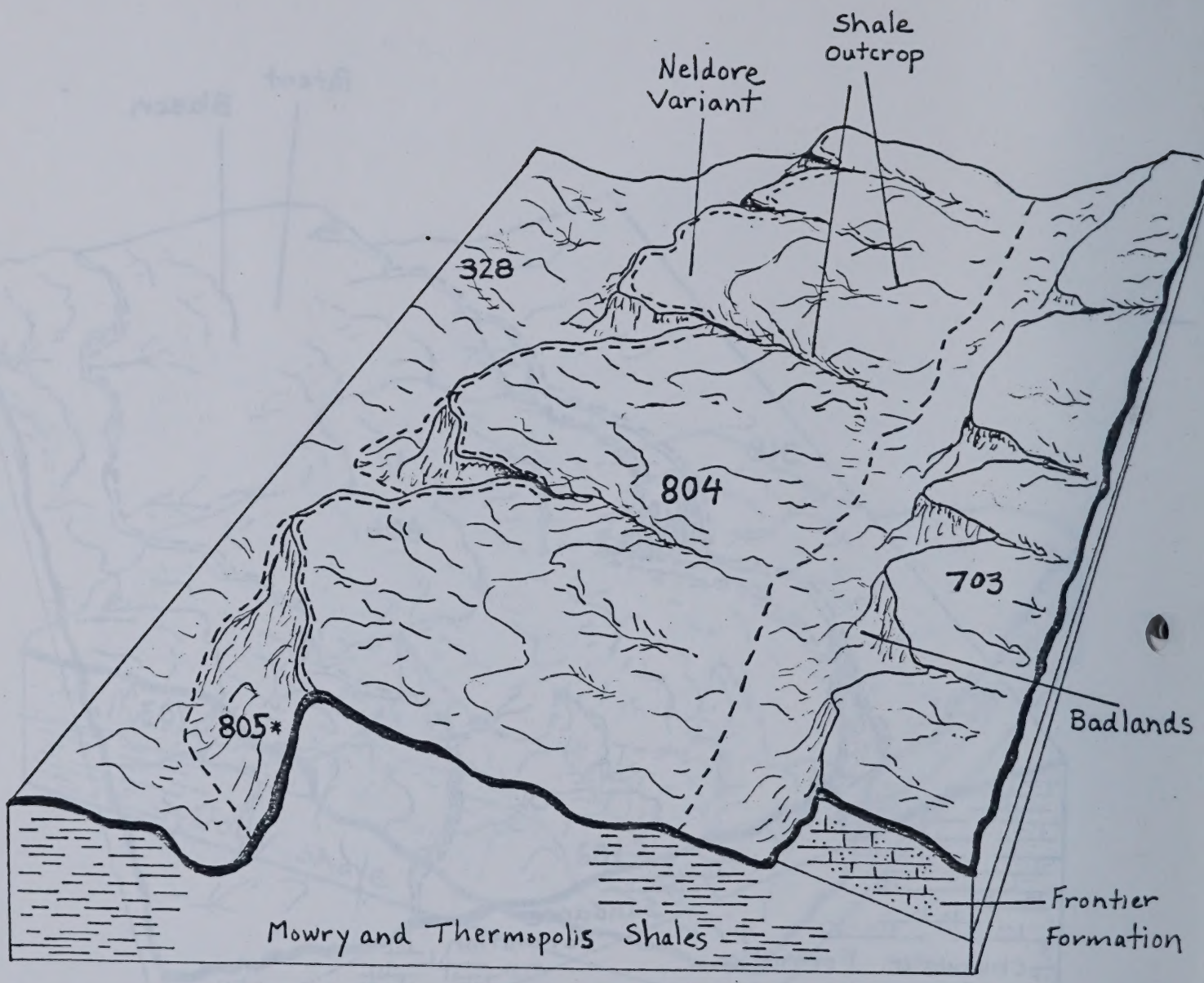

Block diagram illustrating the positions of units 804 and 805 and their relationships to other units.

* The components of unit 805 are so intricately intermingled that they cannot be separated at the scale used.

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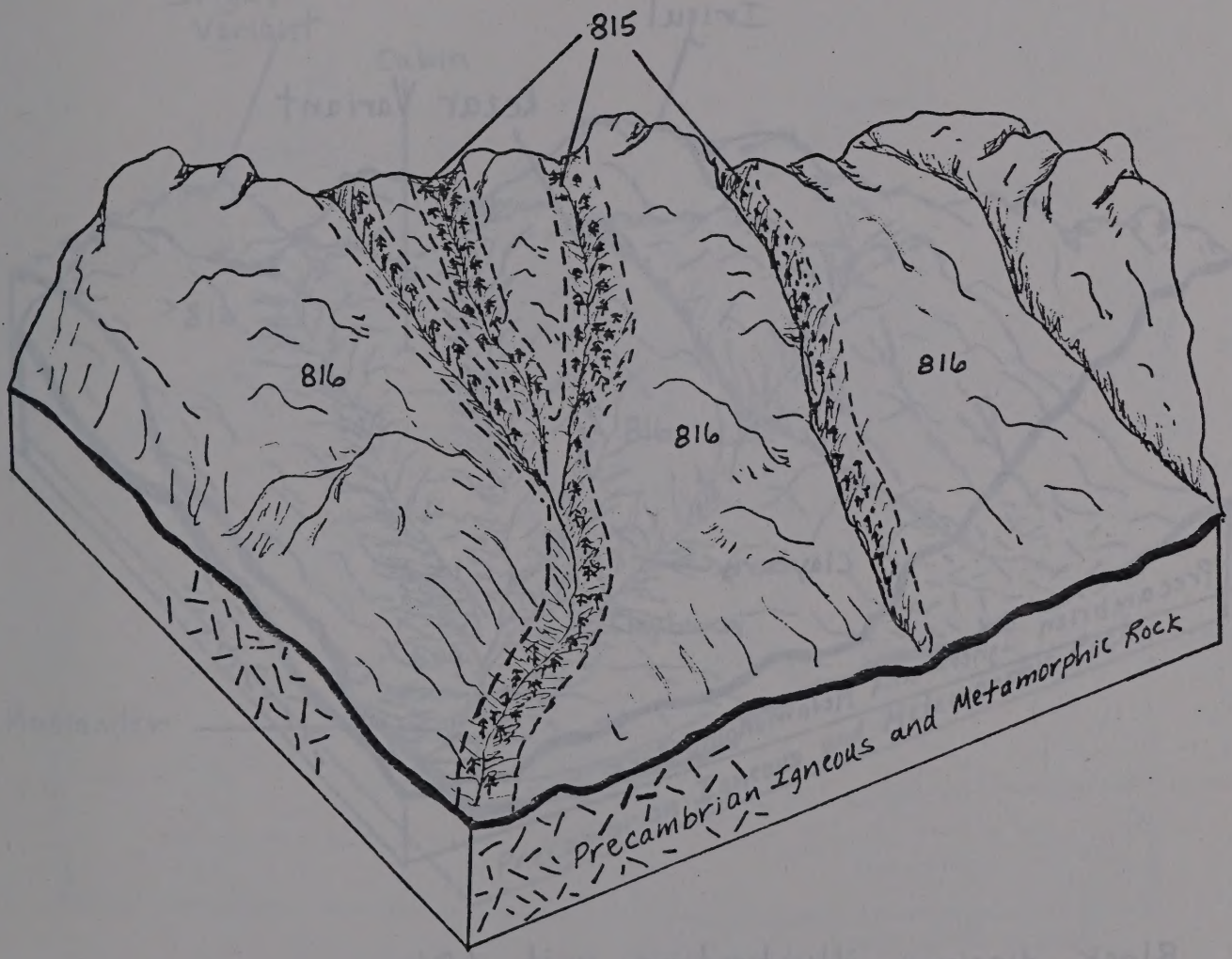

Block diagram illustrating the position of unit 815 and its relationship to other units.

The components of unit 815 are so intricately intermingled that they cannot be separated at this scale.

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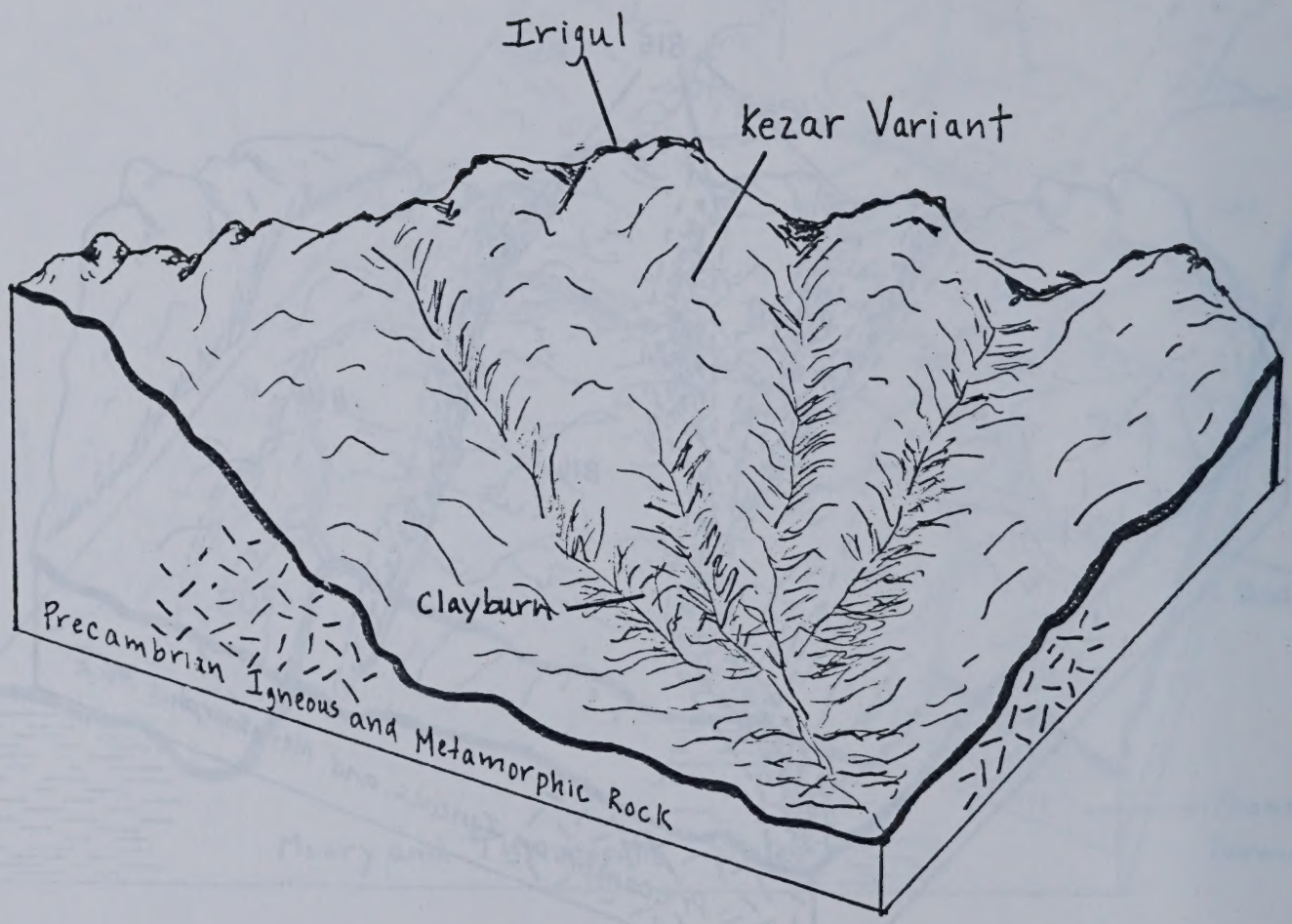

Block diagram illustrating unit 606

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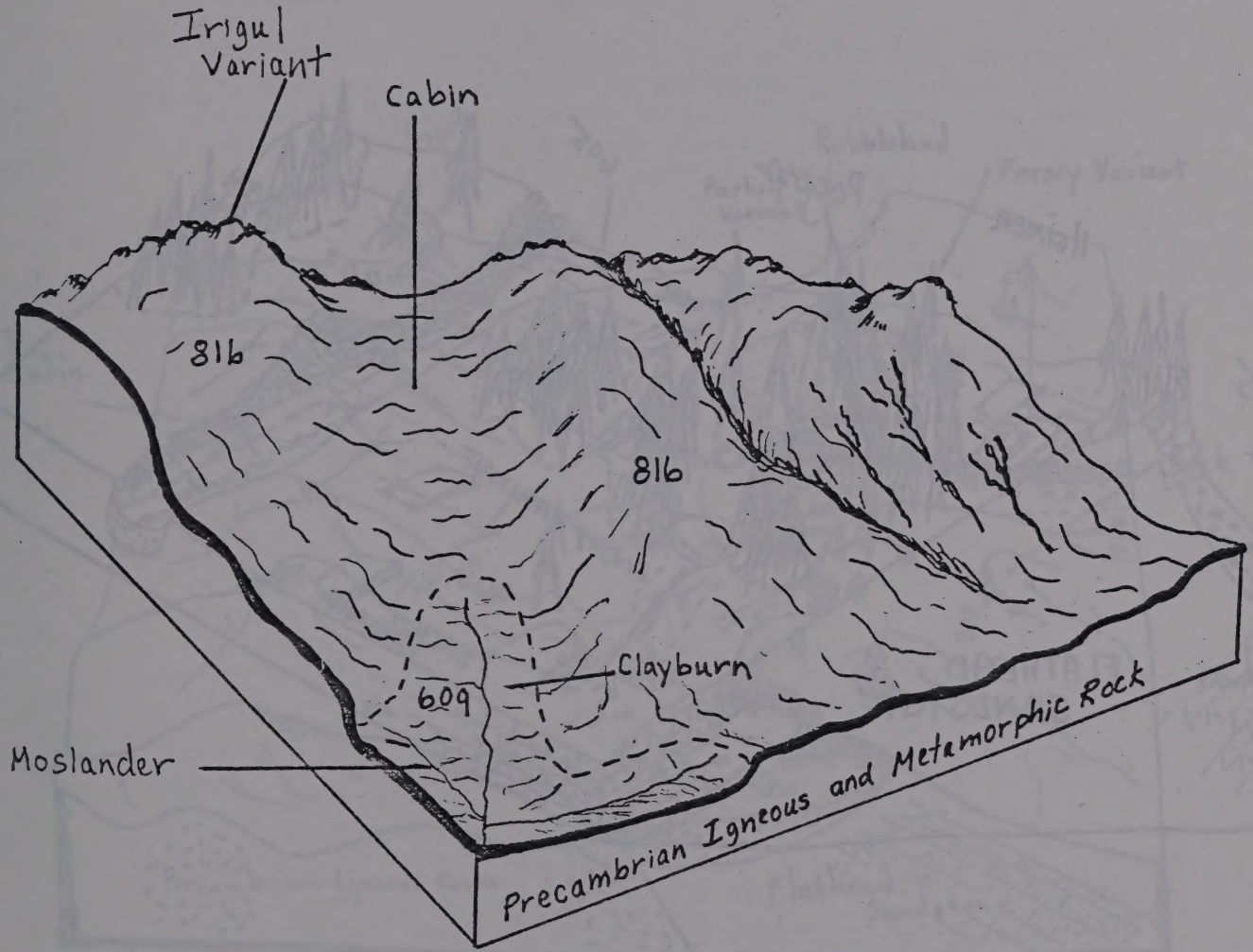

Block diagram illustrating the position of units 609 and 816.

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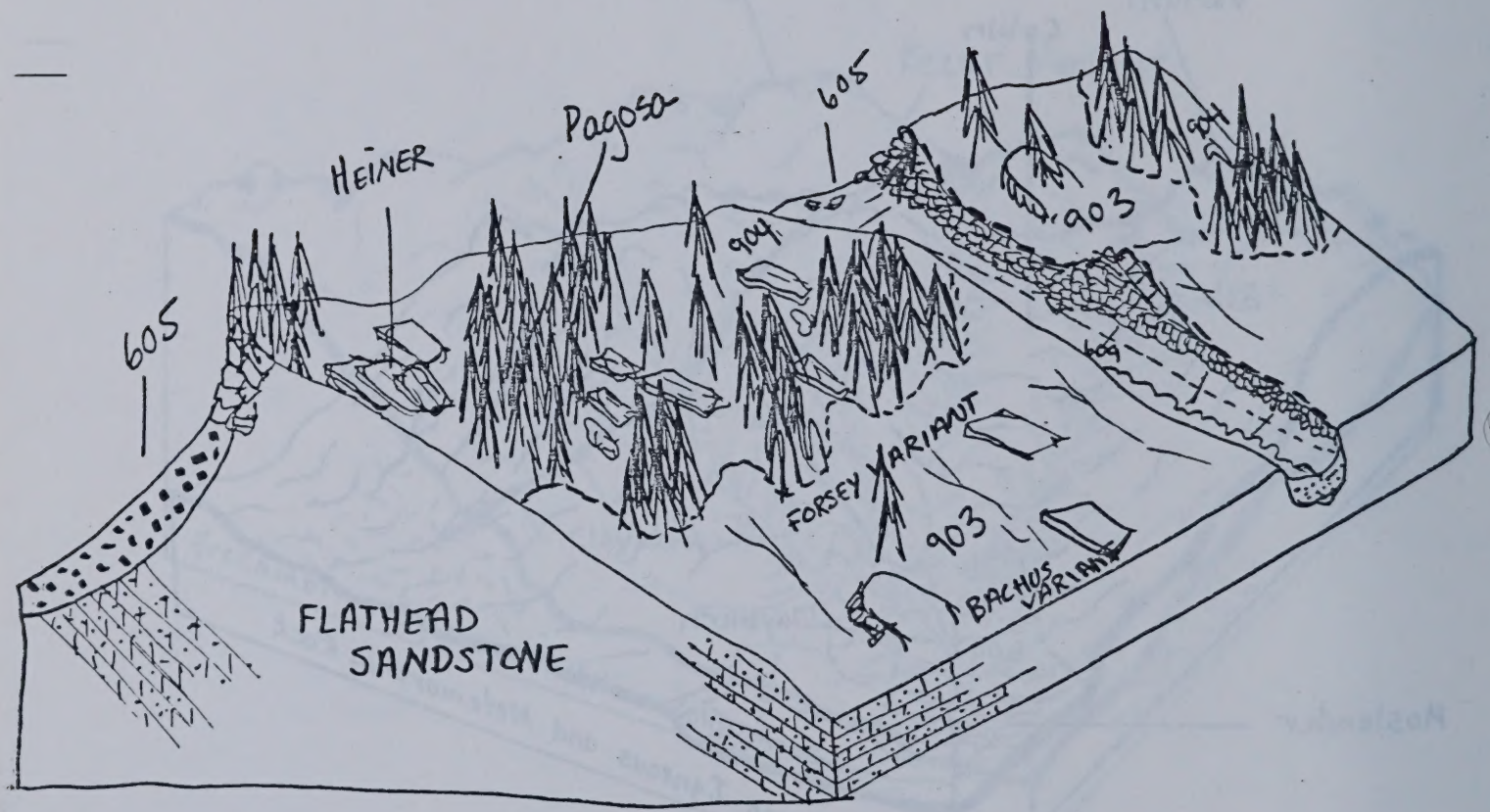
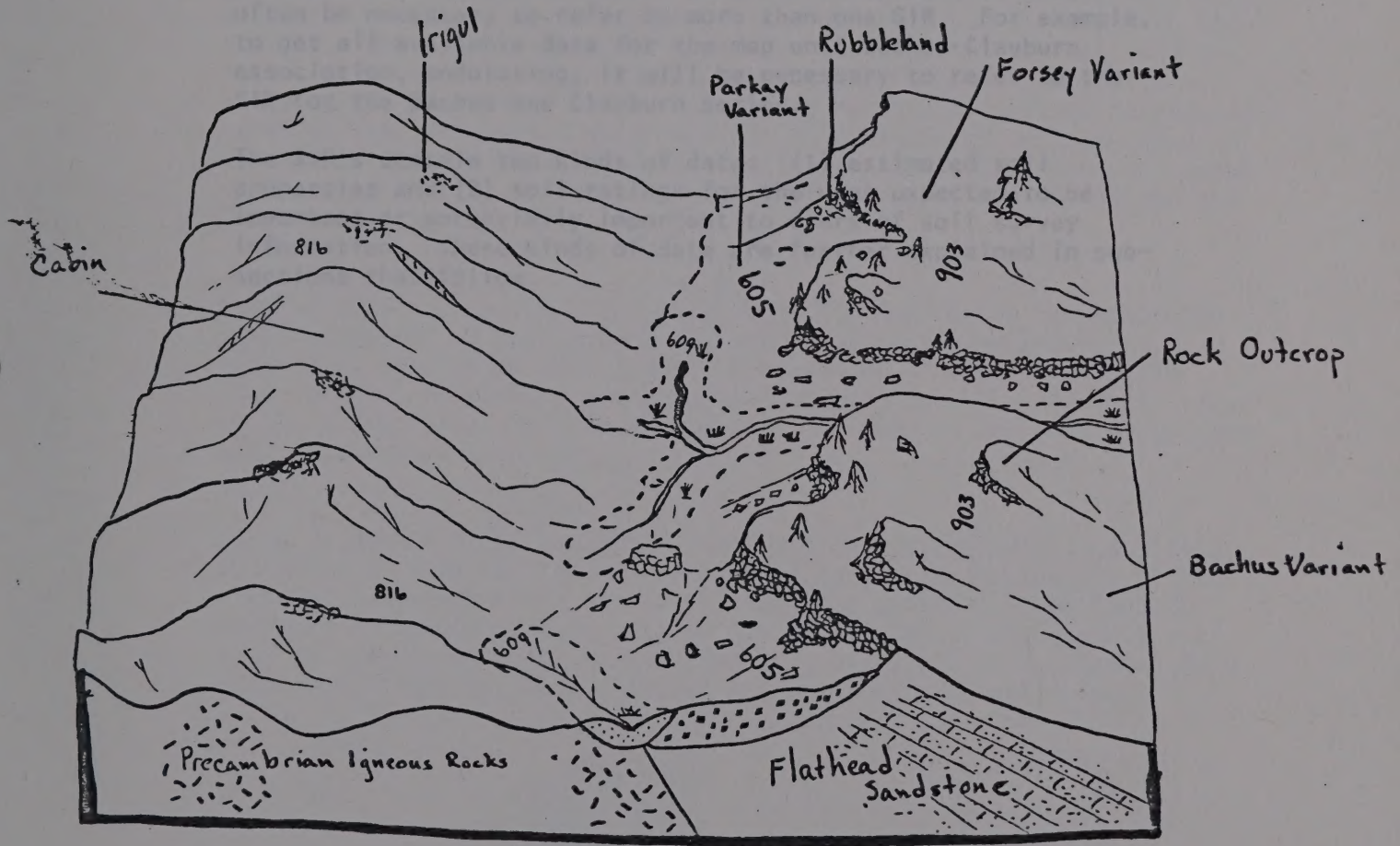


Block Diagrams illistrating the Positions of units 903, 904 and 605



Block Diagram illistrating the positions of units: 605, 609, 816, and 903

Soil Interpretation Records

A Soil Interpretation Record (SIR) is provided for each soil series in the survey area. They are bound together in this report in the section "SOIL SURVEY INTERPRETATIONS" arranged alphabetically by series name.

The SIR is a summary of data collected about each soil series of the area. To summarize all data for a map unit it will often be necessary to refer to more than one SIR. For example, to get all available data for the map unit Bachus-Clayburn association, undulating, it will be necessary to refer to the SIR for the Bachus and Clayburn series.

The SIR's contain two kinds of data: (1) estimated soil properties and (2) soil ratings for the uses expected to be important or potentially important to users of soil survey information. These kinds of data are further explained in subsections that follow.

Soil Properties

Extensive data about soil properties collected during the soil survey are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of samples selected from representative soil profiles in the field.

When he makes soil borings during field mapping, the soil scientist can identify several important soil properties. He notes the seasonal soil moisture condition, or the presence of free water and its depth in the profile. For each horizon, he notes the thickness of the soil and its color; the texture, or the amount of clay, silt, sand, and gravel or other coarse fragments; the structure, or natural pattern of cracks and pores in the undisturbed soil; and the consistence of soil in-place under the existing soil moisture conditions. He records the root depth of existing plants, determines soil pH or reaction, and identifies any free carbonates.

Samples of soil material are analyzed in the laboratory to verify the field estimates of soil properties and to characterize key soils, especially properties that cannot be estimated accurately by field observation. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for many of the soil series are available from nearby areas.

Based on summaries of available field and laboratory data, and listed in tables in this section, are estimated ranges in engineering properties and classifications and in physical and chemical properties for each major horizon of each soil in the survey area. Also, pertinent soil and water features, engineering test data, and data obtained from laboratory analyses, both physical and chemical, are presented.

PRELIMINARY OBJECTIVE

Engineering Properties

The SIR gives estimates of engineering properties and classifications for the major horizons of each soil in the survey area. These estimates are presented as ranges in values most likely to exist in areas where the soil is mapped.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Information is presented for each of these contrasting horizons. Depth to the upper and lower boundaries of each horizon in a typical profile of each soil is indicated. More information about the range in depth and in properties of each horizon is given for each soil series in "Soil Series Descriptions and Morphology."

Texture is described in the SIR in standard terms used by the United States Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If a soil contains gravel or other particles coarser than sand, an appropriate modifier is added, for example, "gravelly loam." Other texture terms used by USDA are defined in the Glossary.

The two systems commonly used in classifying soils for engineering use are the Unified Soil Classification System (USCS) and the American Association of State Highway and Transportation Officials Soil Classification System (AASHTO). In the SIR soils in the survey area are classified according to both systems.

The USCS system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter, plasticity index, liquid limit, and organic matter content. Soils are grouped into 15 classes—eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes have a dual classification symbol, for example CL-ML.

The AASHTO system classifies soils according to those properties that affect their use in highway construction and maintenance. In this

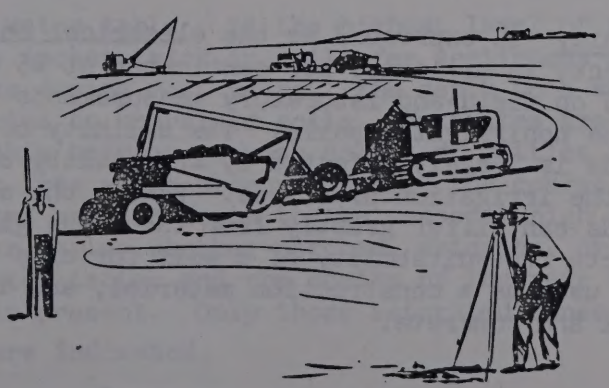
system a mineral soil is classified as one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines. At the other extreme, in group A-7, are fine-grained soils. Highly organic soils are classified as A-8 on the basis of visual inspection.

When laboratory data are available, the A-1, A-2, and A-7 groups are further classified as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As an additional refinement, the desirability of soils as subgrade material can be indicated by a group index number. These numbers range from 0 for the best subgrade material to 20 or more for the poorest. The estimated classification, without group index numbers, is given in the SIR. Also in the SIR the percentage, by weight, of cobbles or the rock fragments more than 3 inches in diameter are estimated for each major horizon. These estimates are determined largely by observing volume percentage in the field and then converting it, by formula, to weight percentage.

Percentage of the soil material less than 3 inches in diameter that passes each of four standard sieves is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey area and in nearby areas and on field estimates from many borings made during the survey.

Liquid limit and plasticity index indicate the effect of water on the strength and consistency of soil. These indexes are used in both the USCS and the AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior.

Range in liquid limit and plasticity index are estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.



Physical and Chemical Properties

The SIR shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major horizon, at the depths indicated, in the representative profile of each soil. The estimates are based on field observations and on test data for these and similar soils.

Permeability is estimated on the basis of known relationships between the soil characteristics observed in the field—particularly soil structure, porosity, and gradation or texture—that influence the downward movement of water in the soil. The estimates are for water movement in a vertical direction when the soil is saturated. Not considered in the estimates are lateral seepage or such transient soil features as plowpans, and surface crusts. Permeability of the soil is an important factor to be considered in the planning and design of drainage systems, in evaluating the potential of soils for septic tank systems and other waste disposal systems, and in many other aspects of land use and management.

Available water capacity is rated on the basis of soil characteristics that influence the ability of the soil to hold water and make it available to plants. Important characteristics are content of organic matter, soil texture, and soil structure. Shallow-rooted plants are not likely to use the available water from the deeper soil horizons. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design of irrigation systems.

Soil reaction is expressed as range in pH values. The range in pH of each major horizon is based on many field checks. For many soils, the values have been verified by laboratory analyses. Soil reaction is important in selecting the crops and ornamental or other plants to be grown, in evaluating soil amendments for fertility and stabilization, and in evaluating the corrosivity of soils.

Salinity is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of the nonirrigated soils. The salinity of individual irrigated fields is largely affected by the quality of the irrigation water and the irrigation practices. Hence, the salinity of individual fields can differ greatly from the value given in the SIR Salinity affects the suitability of a soil for crop production, its stability when used as a construction material, and its potential to corrode metal and concrete.

Soil and Water Features

Features that relate to runoff or infiltration of water, to flooding, to grading and excavation, and to subsidence and frost action of each soil are indicated in the SIR. This information is helpful in planning land uses and engineering projects that are likely to be affected by the amount of runoff from watersheds, by flooding and a seasonal high water table, by the presence of bedrock or a cemented pan in the upper 5 or 6 feet of the soil, by subsidence, or by frost action.

Hydrologic groups are used to estimate runoff after rainfall. Soil properties that influence the minimum rate of infiltration into the bare soil after prolonged wetting are depth to a water table, water intake rate and permeability after prolonged wetting, and depth to layers of slowly or very slowly permeable soil.

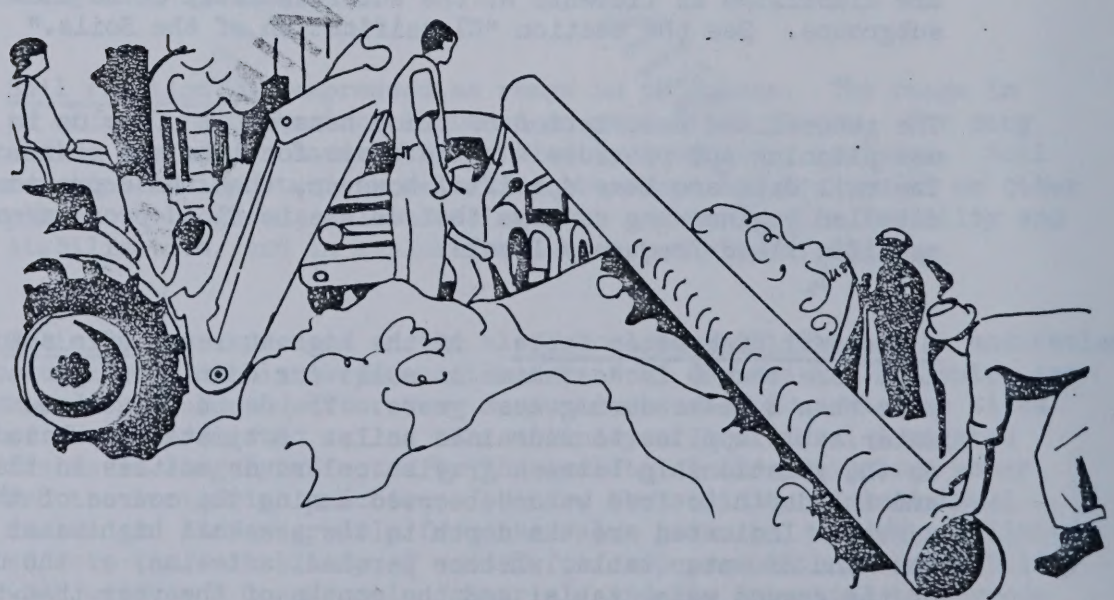
Flooding is rated in general terms that describe the frequency, duration, and period of the year when flooding is most likely. The ratings are based on evidences in the soil profile of the effects of flooding, namely thin strata of gravel, sand, silt, or, in places, clay deposited by floodwater; irregular decrease in organic-matter content with increasing depth; absence of distinctive soil horizons that form in soils of the area that are not subject to flooding local information about floodwater heights and the extent of flooding; and local knowledge that relates the unique landscape position of each soil to historic floods. Most soils in low positions on the landscape where flooding is likely to occur are classified as fluvents at the suborder level or as fluventic subgroups. See the section "Classification of the Soils."

The generalized description of flood hazards is of value in land use planning and provides a valid basis for land use restrictions. The soil data are less specific, however, than those provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

A seasonal high water table is the highest level of a saturated zone more than 6 inches thick in soils for continuous period of more than 2 weeks during most years. The depth to a seasonal high water table applies to undrained soils. Estimates are based mainly on the relationship between grayish colors or mottles in the soil and the depth to free water observed during the course of the soil survey. Indicated are the depth to the seasonal high water table; the kind of water table, whether perched, artesian, or the upper part of the ground water table; and the months of the year that the high water commonly is present. Only those saturated zones above a depth of 5 or 6 feet are indicated.

Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others it was estimated on the basis of the kind of clay and on measurements of similar soils. Size of imposed loadings and the magnitude of changes in soil moisture content are also important factors that influence the swelling of soils. Shrinking and swelling of some soils can cause damage to building foundations, basement walls, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

Risk of corrosion, as used in the SIR, pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to soil moisture, particle-size distribution, total acidity, and electrical conductivity of the soil material. The rating of soils for corrosivity to concrete is based mainly on the sulfate content, soil texture, and acidity. Protective measures for steel or more resistant concrete help to avoid or minimize damage resulting from the corrosion. Installations of steel that intersect soil boundaries or soil horizons are more susceptible to corrosion than installations entirely within one kind of soil or within one soil horizon.



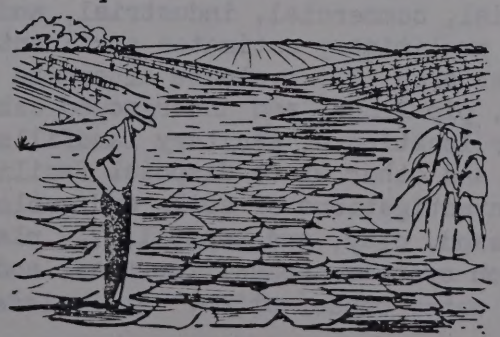
Information about the seasonal high water table helps in assessing the need for specially designed foundations, the need for specific kinds of drainage systems, and the need for footing drains to insure dry basements. Such information is also needed to decide whether or not to construct basements and to determine how septic tank absorption fields and other underground installations will function. Also, a seasonal high water table affects ease of excavation.

Depth to bedrock is shown for all soils that are underlain by bedrock at depths of 5 to 6 feet or less. For many soils, limited ranges in depth to bedrock is a part of the definition of the soil series. The depths shown are based on measurements made in many soil borings and other observations during the soil mapping. The kind of bedrock and its relative hardness as related to ease of excavation is also shown. Reppable bedrock can be excavated with a single-tooth ripping attachment on a 200 horsepower tractor, but hard bedrock generally requires blasting.

Cemented pans are hard subsurface layers that are strongly compacted (indurated). Such pans cause difficulty in excavation. Hardness of pans is defined the same as hardness of bedrock.

Subsidence is the settlement of organic soils or of soils containing semifluid layers. Initial subsidence generally results from local drainage. Total subsidence is initial subsidence plus the slow lowering of elevation through a period of several years because of oxidation or compression of organic material.

Potential frost action refers to the likelihood of damage to pavements and other structures by frost heaving and low soil strength after thawing. Frost action is defined as freezing temperatures in the soil and movement of soil moisture into the freezing zone, which causes the formation of ice lenses. Soil texture, temperature, moisture content, porosity, permeability, and content of organic matter are the most important soil properties that affect frost action. It is assumed that the soil is not covered by insulating vegetation or snow and is not artificially drained. Silty and clayey soils that have a high water table in winter are most susceptible to frost action. Well drained very gravelly or sandy soils are the least susceptible.



ENGINEERING

This section provides information about the use of soils for building sites, sanitary facilities, construction materials, and water management. Among those who can benefit from this section are engineers, landowners, community decision makers and planners, town and city managers, land developers, builders, contractors, and farmers and ranchers.

The ratings in tables in this section are based on test data and estimated data in the "Soil Properties" section. The ratings were determined jointly by soil scientists and engineers of the Soil Conservation Service using known relationships between the soil properties and the behavior of soils in various engineering uses.

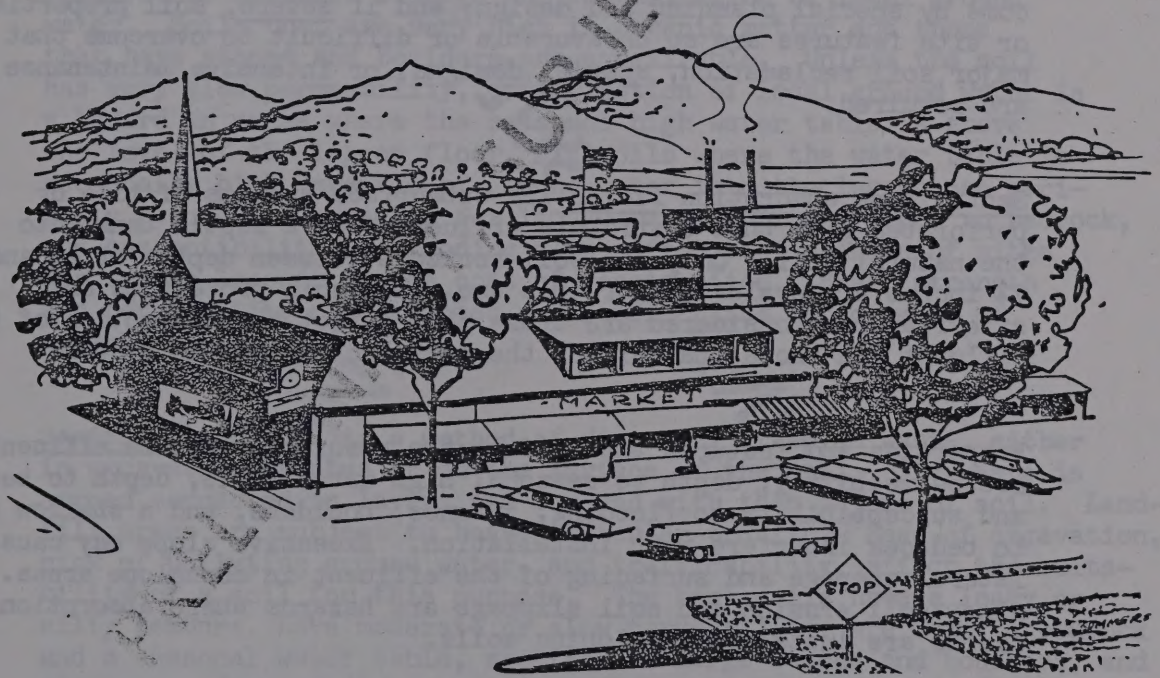
Among the soil properties and site conditions identified by the soil survey and used in determining the ratings in this section are grain-size distribution, liquid limit, plasticity index, soil reaction, depth to and hardness of bedrock within 5 or 6 feet of the surface, soil wetness characteristics, depth to a seasonal water table, slope, likelihood of flooding, natural soil structure or aggregation, in-place soil density, and geologic origin of the soil material. Where pertinent, data about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of absorbed cations were also considered.

Based on the information assembled about soil properties, ranges of values may be estimated for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, shear strength, compressibility, slope stability, and other factors of expected soil behavior in engineering uses. As appropriate, these values may be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations for small buildings, ponds and small dams, irrigation projects, drainage systems, sewage and refuse disposal systems, and other engineering works. The ranges of values can be used to: 1. select potential residential, commercial, industrial, and recreational areas; 2. make preliminary estimates pertinent to construction in a particular area; 3. evaluate alternate routes for roads, streets, highways, pipelines, and underground cables; 4. evaluate alternate sites for location of sanitary landfills, onsite sewage disposal systems, and other waste disposal facilities; 5. plan detailed onsite investigations of soils and geology; 6. find sources of gravel, sand, clay, and topsoil; 7. plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; 8. relate performance of

structures already built to the properties of the kinds of soil on which they are built so that performance of similar structures on the same or a similar soil in other locations can be predicted; and 9. predict the trafficability of soils for cross-country movement of vehicles and construction equipment.

Data presented in this section are useful for land-use planning and for choosing alternative practices or general designs that will overcome unfavorable soil properties and minimize soil-related failures. Limitations to the use of these data, however, should be well understood. First, the data are generally not presented for soil material below a depth of 5 or 6 feet. Also, because of the scale of the detailed map in this soil survey, small areas of soils that differ from the dominant soil may be included in mapping. Thus, these data do not eliminate the need for onsite investigations and testing.



Sanitary Facilities

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil properties that deal with the ease of excavation or installation of these facilities will be of interest to contractors and local officials. THE SIR shows the degree and kind of limitations of each soil for these uses and for use of the soil as daily cover for landfills.

If the degree of soil limitation is indicated by the rating slight, soils are favorable for the specified use and limitations are minor and easily overcome; if moderate, soil properties or site features are unfavorable for the specified use, but limitations can be overcome by special planning and design; and if severe, soil properties or site features are so unfavorable or difficult to overcome that major soil reclamation, special designs, or intensive maintenance are required.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil. Only the soil horizons between depths of 18 and 72 inches are evaluated for this use. The soil properties and site features considered are those that affect the absorption of the effluent and those that affect the construction of the system.

Properties and features that effect the absorption of the effluent are permeability, depth to seasonal high water table, depth to bedrock, and susceptibility to flooding, Stones, boulders, and a shallow depth to bedrock interfere with installation. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas. Also, soil erosion and soil slippage are hazards where absorption fields are installed in sloping soils.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth less than 4 feet below the tile lines. In these soils the absorption field does not adequately filter the effluent, and as a result, ground water supplies in the area may be contaminated. Soils having a hazard of inadequate filtration are indicated by footnotes in the SIR.

Percolation tests are performed to determine the absorptive capacity of the soil and its suitability for septic tank absorption fields. These tests should be performed during the season when the water table is highest and the soil is at minimum absorptive capacity.

In many of the soils that have moderate or severe limitations for septic tank absorption fields, it may be possible to install special systems that lower the seasonal water table or to increase the size of the absorption field so that satisfactory performance is achieved.

Sewage lagoons are shallow ponds constructed to hold sewage while bacteria decompose the solid and liquid wastes. Lagoons have a nearly level flow area surrounded by cut slopes or embankments of compacted, nearly impervious soil material. They generally are designed so that depth of the sewage is 2 to 5 feet. Impervious soil at least 4 feet thick for the lagoon floor and sides is required to minimize seepage and contamination of local ground water. Soils that are very high in organic matter and those that have stones and boulders are undesirable. Unless the soil has very slow permeability, contamination of local ground water is a hazard in areas where the seasonal high water table is above the level of the lagoon floor. In soils where the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce its capacity for liquid waste. Slope, depth to bedrock, and susceptibility to flooding also affect the location of sites for sewage lagoons or the cost of construction. Shear strength and permeability of compacted soils affect the performance of embankments.

Sanitary landfill is a method of disposing of solid waste, either in excavated trenches or on the surface of the soil. The waste is spread compacted in layers and covered with thin layers of soil. Landfill areas are subject to heavy vehicular traffic. Ease of excavation, risk of polluting ground water, and trafficability, affect the suitability of a soil for this purpose. The best soils have a loamy or silty texture, have moderate or slow permeability, are deep to bedrock and a seasonal water table, are free of large stones and boulders, and are not subject to flooding. In areas where the seasonal water table is high, water seeps into the trenches and causes problems in excavating and filling the trenches. Also, seepage into the refuse increases the risk of pollution of ground water. Clayey soils are likely to be sticky and difficult to spread. Sandy or gravelly soils generally have rapid permeability that might allow noxious liquids to contaminate local ground water.

Unless otherwise stated, the ratings in the SIR apply only to soil properties and features within a depth of about 6 feet. If the

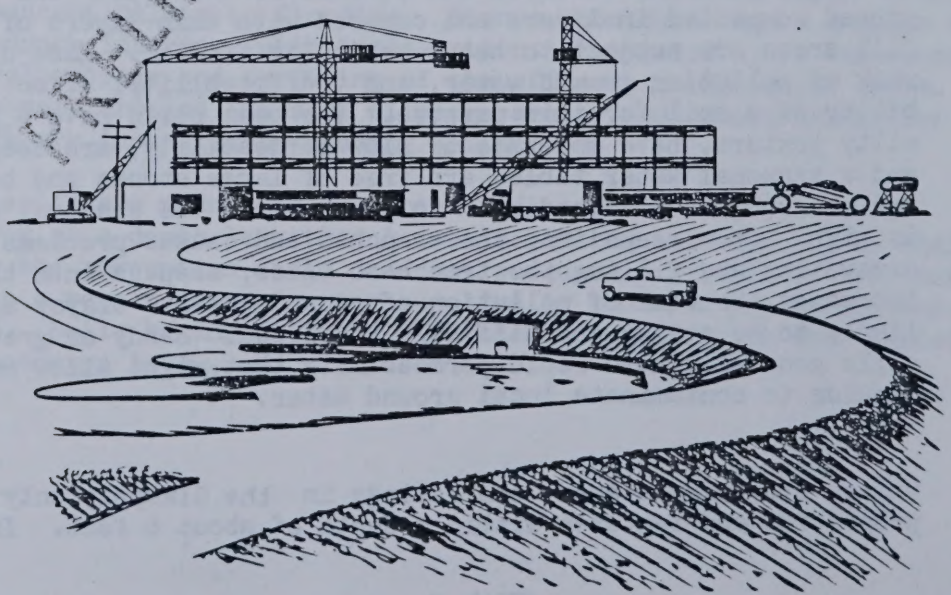
trench is deeper, ratings of slight or moderate may not be valid. Site investigation is needed before a site is selected.

In the area type of sanitary landfill, refuse is placed on the surface of the soil in successive layers. The limitations caused by soil texture, depth to bedrock, and stone content do not apply to this type of landfill. Soil wetness, however, may be a limitation because of difficulty in operating equipment.

Daily cover for sanitary landfills should be soil that is easy to excavate and spread over the compacted fill during both wet and dry weather. Soils that are loamy or silty and free of stones or boulders are better than other soils. Clayey soils may be sticky and difficult to spread; sandy soils may be subject to soil blowing.

In addition to these features, the soils selected for final cover of landfills should be suitable for growing plants. In comparison with other horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area or trench—type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

Where it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the sites should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas, such as slope, erodibility, and potential for plant growth.



PRELIMINARY

Building Site Development

The degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets are indicated in the SIR. A slight limitation indicates that soil properties are favorable for the specified use; any limitation is minor and easily overcome. A moderate limitation indicates that soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design. A severe limitation indicates one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

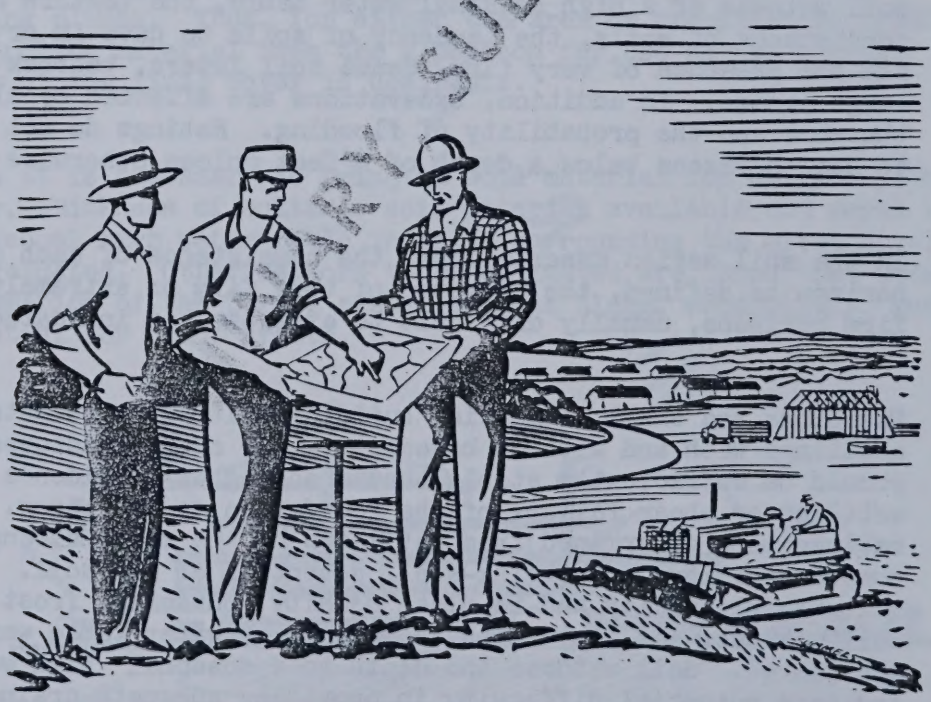
Shallow excavations are used for pipelines, sewerlines, telephone and power transmission lines, basements, open ditches, and cemeteries. Such digging or trenching is influenced by the soil wetness of a high seasonal water table, the texture and consistence of soils, the tendency of soils to cave in or slough, and the presence of very firm, dense soil layers, bedrock or large stones. In addition, excavations are affected by slope of the soil and the probability of flooding. Ratings do not apply to soil horizons below a depth of 6 feet unless otherwise noted.

In the soil series descriptions, the consistence of each soil horizon is defined, the presence of very firm or extremely firm horizons, usually difficult to excavate, is indicated.

Dwellings and small commercial buildings without basements and for dwellings with and without basements. For such structures, soils should be sufficiently stable that cracking or subsidence from settling or shear failure of the foundation do not occur. These ratings were determined from estimates of the shear strength, compressibility, and shrink-swell potential of the soil. Soil texture, plasticity and in-place density, potential frost action, soil wetness, and depth to a seasonal high water table were also considered. Soil wetness and depth to a seasonal high water table indicate potential difficulty in providing adequate drainage for basements, lawns, and gardens. Depth to bedrock, slope, and the large stones in or on the soil are also important considerations in the choice of sites for these structures and were considered in determining the ratings. Susceptibility to flooding is a serious limitation.

Local roads and streets referred to in the SIR have an all-weather surface that can carry light to medium traffic all year. They consist of subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with soil material at hand, and most cuts and fills are less than 6 feet deep.

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material available are important in design and construction of roads and streets. The AASHTO and Unified classifications of the soil and the soil texture, density, shrink-swell potential, and potential frost action are indicators of the traffic supporting capacity used in making the ratings. Soil wetness, flooding, slope, depth to hard rock or very compact layers, and content of large stones, all of which affect stability and ease of excavation, were also considered.



ARY SUBJE

Construction Materials

The suitability of each soil as a source of road fill, sand, gravel, and topsoil is indicated in the SIR by ratings of good, fair or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction materials. Each soil is evaluated to the depth observedand described as the survey is made, generally about 6 feet.

Road fill is soil material used in embankments for roads. The ratings reflect the ease of excavating and working the material and the expected performance of the material after it has been compacted and adequately drained. The performance of soil after it is stabilized with lime or cement is not considered in the ratings, but information about soil properties that determine such performance is given in the descriptions of soil series.

The ratings apply to the soil profile between the A horizon and a depth of 5 to 6 feet. It is assumed that soil horizons will be mixed during excavation and spreading. Many soils have horizons of contrasting suitability within the profile. The estimated engineering properties in the SIRprovide more specific information about the nature of each horizon that can help determine its suitability for road fill.

According to the Unified soil classification system, soils rated good have low shrink-swell potential, low potential frost action, and few cobbles and stones. They are at least moderately well drained and have slopes of 15 percent or less. Soils rated fair have a plasticity index of less than 15 and have other limiting features, such as high shrink-swell potential frost action, steep slopes, wetness or many stones. If the thickness of suitable material is less than 3 feet, the entire soil is rated poor, regardless of the quality of the suitable material.

Sand and gravel are used in great quantities in many kinds of construction. The ratings in the SIR provide guidance as to where to look for probable sources and are based on the probablity that soils in a given areas contain sizable quantities of sand or gravel. A soil rated good or fair has a layer of suitable material at least 3 feet thick, the top of which is within a depth of 6 feet. Coarse fragments of soft bedrock material, such as shale and siltstone, are not considered to be sand and gravel. Fine-grained soils are not suitable sources of sand and gravel.

The ratings do not take into account depth to the water table or other factors that affect excavation of the material. Descriptions of grain size, kinds of minerals, reaction, and stratification are given in the soil series descriptions and in the SIR.

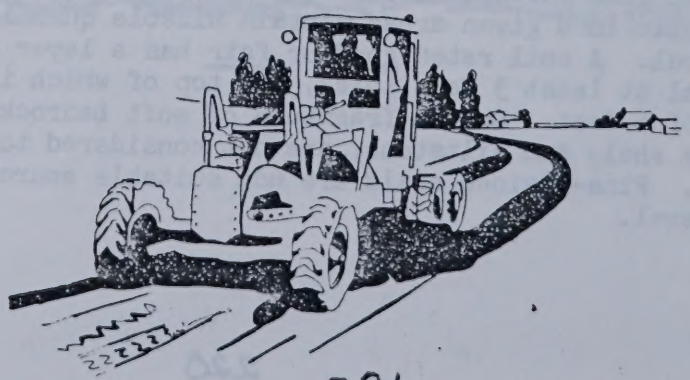
Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to sustain the growth of plants. Also considered is the damage that would result to the area from which the topsoil is taken.

Soils rated good have at least 16 inches of friable loamy material at their surface. They are free of stones, are low in content of gravel and other coarse fragments, and have glentle slopes. They are low in soluble salts, which can limit growth. They are naturally fertile or respond well to fertilization. They are not so wet that excavation is difficult during most of the year.

Soils rated fair are loose sandy or firm loamy or clayey soils in which the suitable material is only 8 to 16 inches thick or soils that have appreciable amounts of gravel, stones, or soluble salt.

Soils rated poor are very sandy soils, very firm clayey soils, soils with suitable layers less than 8 inches thick, soils having large amounts of gravel, stones or soluble salt, steep soils, and poorly drained soils.

Although a rating of good is not based entirely on high content of organic matter a surface horizon is much preferred for topsoil because of its organic-matter content. This horizon is designated as A1 or Ap in the soil series descriptions. The absorption and retention of moisture and nutrients for plant growth are greatly increased by organic matter. Consequently, careful preservation and use of material from these horizons is desirable.



WATER MANAGEMENT

Many soil properties and site features that affect water management practices have been identified in this soil survey. In Table P1, the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water control structures.

Soil and site limitation are expressed as slight, moderate, and severe. Slight means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. Moderate means that some soil properties or site features are unfavorable for the rated use but can be overcome or modified by special planning and design. Severe means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils suitable for this use have low seepage potential, which is determined by the permeability and depth over fractured or permeable bedrock or other permeable material.

Embankments, dikes and levees require soil material that is resistant to seepage, erosion, and piping and is of favorable stability, shrink-swell potential, shear strength, and compaction characteristics. Stones and organic matter in a soil downgrade the suitability of a soil for use in embankments, dikes, and levees.

An aquifer-fed excavated pond is a body of water created by excavating a pit or dugout into a ground-water aquifer. Excluded are ponds that are fed by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Ratings in Table P1 are for ponds that are properly designed, located, and constructed. Soil properties and site features that affect aquifer-fed ponds are depth to a permanent water table, permeability of the aquifer, quality of the water, and ease of excavation.

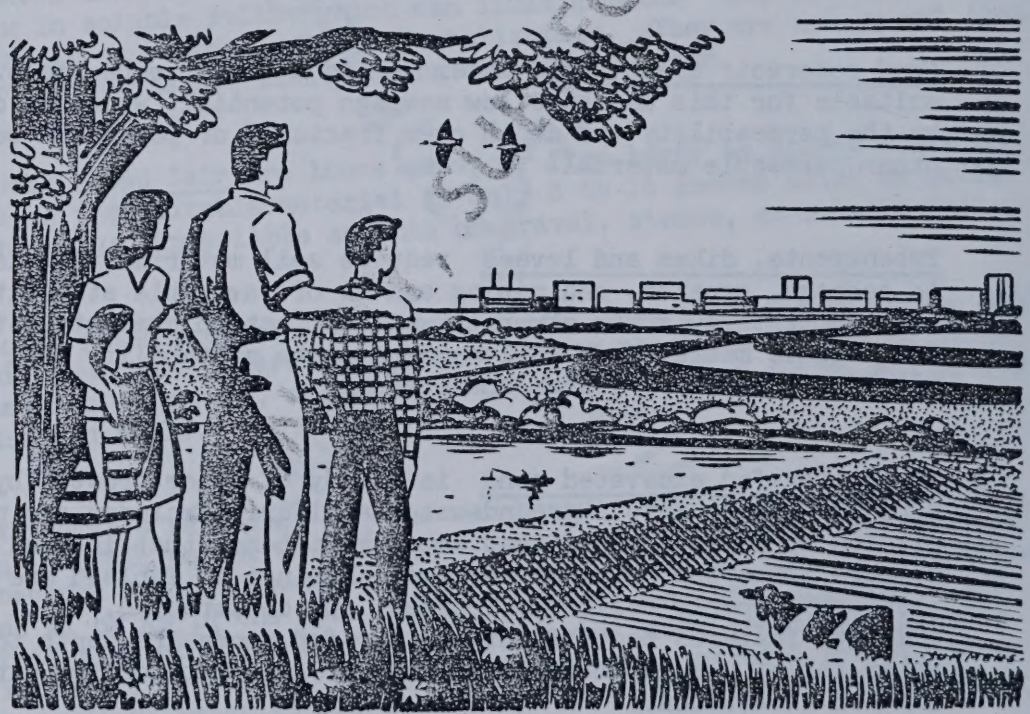
Drainage of soil is affected by such soil properties as permeability texture, structure, depth to claypan or other layers that influence rate of water movement, depth to the water table, slope, stability of ditchbanks, susceptibility to flooding, salinity and alkalinity, and availability of outlets for drainage.

Irrigation is affected by such features as slope, susceptibility to flooding, hazards of water erosion and soil blowing, texture, presence of salts and alkali, depth of root zone, rate of water intake at the

surface, permeability of the soil below the surface layer, available water capacity, need for drainage, and depth to the water table.

Terraces and diversions are embankments, or a combination of channels and ridges, constructed across a slope to intercept runoff and allow the water to soak into the soil or flow slowly to an outlet. Features that affect suitability of a soil for terraces are uniformity of slope and steepness, depth to bedrock or other unfavorable material, permeability, each of establishing vegetation, and resistance to water erosion, soil blowing, soil slipping, and piping.

Grassed waterways are constructed to channel runoff at nonerosive velocities to outlets. Features that affect the use of soils for waterways are slope, permeability, erodibility, and suitability for permanent vegetation.



Capability Classes and Subclasses

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when they are used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management. This classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or for engineering purposes.

In the capability system, all kinds of soils are grouped at three levels: capability class, subclass, and unit. These levels are defined in the following paragraphs.

CAPABILITY CLASSES, the broades groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V soils are not likely to erode, but have other limitations, impractical to remove, that limit their use.

Vlass VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that nearly preclude their use for commercial plants.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter, e,w,s, or c, to the class numeral, for example, IIe. The letter e shows that the main limitation is risk of erosion unless close-growing plant cover

is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses, because the soils of this class have few limitations. Class V contains only the subclasses indicated by w, s, or c, because the soils in Class V are subject to little or no erosion, though they have other limitations that restrict their use to pasture, range, woodland, wildlife habitat, or recreation.

(not used in this report)

Capability units are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe-4 or IIIe-6.

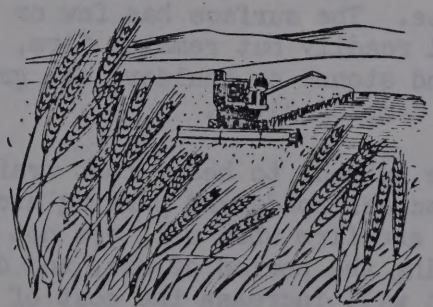
Yields per Acre

The per acre average yields that can be expected of the principal crops under a high level of management are shown in the SIR. In any given year, yields may be higher or lower than those indicated in the SIR because of seasonal variations in rainfall and other climatic factors. Absence of a yield estimate indicates that the crop is not suited to or not commonly grown on the soil or that irrigation of a given crop is not commonly practiced on the soil or not enough reliable yield is available at this present time.

The predicted yields are based mainly on the experience and records of farmers, conservationists, and Extension agents. Results of field trials and demonstrations and available yield data from nearby counties were also considered. 1/

The latest soil and crop management practices used by many farmers in the county are assumed in predicting the yields. Hay and pasture yields are predicted for varieties of grasses and legumes suited to the soil. A few farmers may be using more advanced practices and are obtaining average yields higher than those shown in the SIR.

The management needed to achieve the indicated yields of the various crops depends upon the kind of soil and the crop. Such management provides drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate tillage practices, including time of tillage and seedbed preparation and tilling when soil moisture is favorable; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residues, barnyard manure, and green-manure crops; harvesting crops with the smallest possible loss; and timeliness of all fieldwork.



1/ Agricultural Extention Service, U.S. Department of Agriculture. University of Wyoming, Laramie, Wyoming.

Recreation

The soils of the survey area are rated in the SIR, according to limitations that affect their suitability for camp areas, picnic areas, playgrounds, and paths and trails. The ratings are based on such restrictive soil features as flooding, wetness, slope and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites available, and either access to public sewerlines or capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degree, for recreational use by the duration of flooding and the season when it occurs. Onsite assessment of height, duration, and frequency of flooding is essential in planning recreational facilities.

In the SIR the limitations of soils are rated as slight, moderate, or severe. Slight means that the soil properties are generally favorable and that the limitations are minor and easily overcome. Moderate means that the limitations can be overcome or alleviated by planning, design, or special maintenance. Severe means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in the SIR can be supplemented by additional information in other parts of this survey. Especially helpful are interpretations for septic tank absorption fields, given in the SIR, and interpretations for dwellings without basements and for local roads and streets, given in the SIR.

Camp areas require such site preparation as shaping and leveling tent and parking areas, stablizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils for this use have mild slopes and are not wet nor subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing camping sites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for use as picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that will increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and not wet nor subject to flooding during the season of use. The surface is free of stones or boulders, is firm after rains, and is not dusty when dry. If shaping is required to obtain a uniform grade, the depth of the soil over rock should be sufficient to allow necessary grading.

The design and layout of paths and trails for walking, horseback riding and bicycling should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once during the period of use. They should have moderate slopes and have few or no stones or boulders on the surface.

PRELIMINARY, SUBJECT TO CHANGE

WILDLIFE HABITAT

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover, and they affect the development of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, and water. If anyone of these elements is missing, inadequate or inaccessible wildlife will either be scarce or will not inhabit the area.

If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, by properly managing the existing plant cover, and by fostering the natural establishment of desirable plants.

In the SIR the soils in the survey area are rated according to their potential to support the main kinds of wildlife habitat in the area. This information can be used in --

(1) Planning the use of parks, wildlife refuges, nature study areas, and other developments for wildlife;

(2) Selecting soils that are suitable for creating, improving or maintaining specific elements of wildlife habitat;

(3) Determining the intensity of management needed for each element of the habitat;

(4) Determining areas that are suitable for acquisition to manage for wildlife.

PRELIMINARY SUBJECT TO CHANGE

The potential of the soil is rated good, fair, poor or very poor. A rating of good means that the element of wildlife habitat or the kind of habitat is easily created, improved or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose. A rating of fair means that the element of wildlife habitat or kind of habitat can be created, improved or maintained in most places. Moderate intensity of management and fairly frequent attention are required for satisfactory results. A rating of poor means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved or maintained in most places, but management is difficult and requires intensive effort. A rating of very poor means that restrictions for the element of wildlife habitat or kind of wildlife are very severe and that unsatisfactory results can be expected. Wildlife habitat is impractical or even impossible to create, improve or maintain on soils having such a rating.

The elements of wildlife habitat are briefly described in the following paragraphs.

Grain and seed crops are seed-producing annuals used by wildlife. Examples are milo, wheat, oats, barley, millet, and cereal rye. The major soil properties that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water holding capacity, wetness,

PRELIMINARY SOIL SURVEY

slope, surface stoniness and flood hazard. Soil temperature and soil moisture are also considerations.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Examples are fescue, wheat grass, reed canary grass, , bromegrass, timothy orchardgrass, clover, alfalfa, and meadow foxtail. . Major soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water holding capacity, wetness, surface stoniness, flood hazard and slope. Soil temperature and soil moisture are also considerations.

Wild herbaceous plants are native or naturally established herbaceous grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are Indian ricegrass, buckwheat, grama, bluegrass, and wheatgrass, Major soil properties that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water holding capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark or foliage that wildlife eat. Examples of native plants are Aspen, dogwood, cottonwood, scrub oak, willow, and mountain maple.

Examples of fruit-producing trees that are commercially available and suitable for planting on soils rated good are Russian-olive, autumn-olive and crabapple. Major soil properties that affect growth of hardwood trees and shrubs are depth of the root zone, available water holding capacity and wetness.

Coniferous plants are cone-bearing trees, shrubs or ground cover that furnish habitat or supply food in the form of browse, seeds or fruitlike cones. Examples are pine, spruce, fir, and juniper. Major soil properties that affect the growth of coniferous plants are depth of the root zone, available water holding capacity and wetness.

Shrubs are bushy woody plants that produce fruits, buds, twigs, bark or foliage used by wildlife or that provide cover and shade for some species of wildlife. Examples are mountainmahogany, bitterbrush, snowberry, and big sagebrush.

Major soil properties that affect the growth of shrubs are depth of the root zone, available water holding capacity, salinity and moisture.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites, exclusive of submerged or floating aquatics. They produce food or cover for wildlife that use wetland as habitat. Examples of wetland plants are smartweed, wild-rice, reeds, rushes, sedges, saltgrass, and

PRELIMINARY SUBJECT TO CHANGE

and cattail. Major soil properties affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope and surface stoniness.

Shallow water areas are bodies of surface water that have an average depth of less than 5 feet and are useful to wildlife. They can be naturally wet areas, or they can be created by dams or levees or by water-control devices in marshes or streams. Examples are muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds. Major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope and permeability. The availability of a dependable water supply is important if water areas are to be developed.

The kinds of wildlife habitat are briefly described in the following paragraphs.

Openland habitat consists of croplands, pastures, meadows and areas that are overgrown with grasses, herbs, shrubs and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include- sage grouse, mourning dove, kestrels, meadowlark, red-tailed hawks, cottontail rabbit, jack rabbit and coyote.

Woodland habitat consists of-conifers or quaking aspen or a mixture of both, with associated grasses, legumes and wild herbaceous plants. Examples of wildlife attracted to this habitat are elk, blue grouse, , thrushes, vireos, woodpeckers, red fox, raccoon, mule deer, bobcat, black bear and coyote.

Wetland habitat consists of water-tolerant plants in open, marshy or swampy shallow water areas. Examples of wildlife attracted to this habitat are ducks, geese, American coot, herons, shore birds, bald eagle, red-winged blackbird, marsh hawk, muskrat, beaver and skunk.

Rangeland habitat consists of wild herbaceous plants and shrubs on range. Examples of wildlife attracted to this habitat include antelope, mule deer, cottontail rabbit, jack rabbit, coyote, meadow larks, western larks, golden eagles, rough-legged hawks, and Swainson's hawks.

PRELIMINARY SUBJECT TO CHANGE

Wildlife Habitat Potentials

Most of the soils in the survey area are well suited for rangeland wildlife habitat. Perennial grasses and forbs provide food and cover.

Woodland wildlife is secondary in wildlife importance in the survey area. Elk and mule deer find suitable habitat in the foothills of the Big Horn mountains in the northwest part of the area.

Typical openland wildlife habitat occurs on nonirrigated and irrigated croplands which are not extensive. However, some of the species that prefer this habitat also utilize adjoining rangeland.

Wetland wildlife habitat occurs mostly along perennial streams of which the Powder river and Badwater creek are important.

SOIL SURVEY INTERPRETATIONS

Series (or other Taxon)	Map unit(s)	SIR; Page
Absted	202, 226	240
Arvada	202	242
Bachus	712, 713	244
Bachus Variant	903	246
Bessemer	802	248
Bidman	226	250
Birdsley	311	252
Blazon	319, 326, 389, 806	254
Boettcher	611	256
Bone	202	258
Bosler	223	260
Bributte	311, 801	262
Brownsto	332, 611, 704, 705, 714	264
Cabin	816	266
Cadoma Variant	600	268
Castner	711	270
Cathedral	607	272
Chittum	712, 908	274
Clayburn	606, 609, 712, 713	276
Cragosen	308	278
Crownest	326	280
Cushman	203	282
Decross	710	284
Diamondville	389	286
Diamondville Variant	703	288
Effington	205	290
Emblem	225	292

Series (or other Taxon)	Map Unit(s)	SIR; Page
Embry	435	294
Ethete	225	296
Farlow	604	298
Forelle	388, 702	300
Forkwood	203. 222	302
Forsey	709	304
Forsey Variant	903	306
Glenberg	313	308
Grail	475	310
Griffy Variant	701	312
Haterton	308	314
Haverdad	313	316
Heldt	246	318
Hiland	212, 213, 602	320
Inchau	712	322
Inchau Variant	904	324
Irigul	606	326
Irigul Variant	816	328
Keyner	600	330
Kezar Variant	606	332
Kishona	337, 402	334
Kishona Variant	701	336
Louviers	601	338
Lupinto	223, 332, 702	340
Midway	601	342
Moran	815	344
Moslander	609	346
Moyerson	328	348

Series (or other Taxon)	Map Unit(s)	SIR; Page
Mudray	311	350
Neldore	328	352
Neldore Vaiant	804, 805	354
Nielsen	908	356
Orella	301	358
Pagosa	904	360
Parkay Variant	605	362
Patent	806	364
Petrie	246	366
Rentsac	316, 319, 458, 703, 706, 707, 714	368
Rock outcrop	301, 302, 316, 317, 328, 337, 458, 700, 706, 707, 708, 711, 804, 805, 815, 908	370
Rock River	489	372
Rubble land	605	374
Shingle	302, 402	376
Sinkson	318, 704, 810	378
Starley	604, 708, 709	380
Sunup	337	382
Tassel	302, 435	384
Thedalund	402	386
Thermopolis	317, 318, 458, 705	388
Typic Torriorthents, saline	217	390
Uffens	205	392
Uffens, saline	217	392
Ulric	475	394
Vona	213, 435	396
Wyarno	222	398
Worfman	308, 489	400

Series (or other taxon)	Map Unit(s)	SIR; Page
Worfman Variant	703	402
Woosley	710	404
Yampa	425	406

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 60
REV. JFY, 2-80

ABSTED SERIE

HAPLUSTOLLIC NATRARGIDS, FINE, MONTMORILLONITIC, MESIC

THE ABSTED SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND SIDESLOPES. ELEVATION IS 3500 TO 5000 FEET. PPT IS 10 TO 14 INCHES, MAST IS 47 TO 56 F., AND THE FFS IS 105 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGH BROWNISH GRAY VERY FINE SANDY LOAM ABOUT 3 INCHES THICK. THE SUBSOIL IS BROWN TO LIGHT OLIVE BROWN CLAY ABOUT 9 INCHES THICK. THE SUBSTRATUM IS LIGHT OLIVE BROWN CLAY TO 60 INCHES. SLOPES ARE 0 TO 10 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	VFSL, SIL	ML	A-4	0-5	85-100	85-100	75-95	50-65	15-20	NP-5
0-7	FSL, SL	SM	A-4	0-5	85-100	85-100	65-80	35-50	15-20	NP-5
7-40	SIC, SICL, CL	CL	A-6	0	85-100	85-100	80-100	75-95	30-40	10-20
40-60	C, CL, SICL	CH, CL	A-7	0	85-100	85-100	80-100	70-95	40-60	20-30

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-7	10-20		2.0-6.0	0.15-0.17	6.6-7.8	<2	LOW	.32	4	4	1-2	HIGH	HIGH
0-7	40-50		0.06-0.2	0.11-0.13	6.6-7.8	<2	LOW	.32	4	3	1-2		
7-40	35-45		0.06-0.2	0.16-0.20	>7.8	2-8	MODERATE	.43					
40-60	35-50		0.06-0.2	0.11-0.13	>7.8	>16	HIGH	.55					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE-RARE			>6.0			-		>60		-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2% NONE: SLIGHT 2-7% NONE: MODERATE-SLOPE 7+% NONE: SEVERE-SLOPE 0-7% RARE: SEVERE-FLOODING 7+% RARE: SEVERE-FLOODING,SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-EXCESS SALT
SANITARY LANDFILL (AREA)	0-8% NONE: SLIGHT 8-10% NONE: MODERATE-SLOPE 0-8% RARE: MODERATE-FLOODING 8-10% RARE: MODERATE-FLOODING,SLOPE
DAILY COVER FOR LANDFILL	0-8%: FAIR-THIN LAYER 8-10%: FAIR-SLOPE,THIN LAYER

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-10%: MODERATE-TOO CLAYEY,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8% NONE: MODERATE-SHRINK-SWELL 8-10% NONE: MODERATE-SHRINK-SWELL,SLOPE RARE: SEVERE-FLOODING
DWELLINGS WITH BASEMENTS	0-8% NONE: MODERATE-SHRINK-SWELL 8-10% NONE: MODERATE-SLOPE,SHRINK-SWELL RARE: SEVERE-FLOODING
SMALL COMMERCIAL BUILDINGS	0-4% NONE: MODERATE-SHRINK-SWELL 4-8% NONE: MODERATE-SHRINK-SWELL,SLOPE 8+% NONE: SEVERE-SLOPE 0-8% RARE: SEVERE-FLOODING 8+% RARE: SEVERE-FLOODING,SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-EXCESS SALT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% VFSL,SIL: PERCS SLOWLY 3+% VFSL,SIL: PERCS SLOWLY,SLOPE 0-3% FSL,SL: SOIL BLOWING,PERCS SLOWLY 3+% FSL,SL: SOIL BLOWING,PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	0-8% VFSL,SIL: ERODES EASILY 8+% VFSL,SIL: SLOPE,ERODES EASILY 0-8% FSL,SL: ERODES EASILY,SOIL BLOWING 8+% FSL,SL: SLOPE,ERODES EASILY,SOIL BLOWIN
GRASSED WATERWAYS	0-8%: ERODES EASILY,PERCS SLOWLY 8+%: SLOPE,ERODES EASILY,PERCS SLOWLY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% NONE: SLIGHT 8-10% NONE: MODERATE-SLOPE RARE: SEVERE-FLOODING	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% FSL,SL: SLIGHT 8-10% FSL,SL: MODERATE-SLOPE 0-8% VFSL,SIL: MODERATE-DUSTY 8-10% VFSL,SIL: MODERATE-SLOPE,DUSTY	PATHS AND TRAILS	FSL,SL: SLIGHT VFSL,SIL: MODERATE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)		WHEAT, SPRING (BU)		–							
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	6S	6S	0.5	1.0	–	3	10	–								
6+%	6E	–	–	–	–	–	–	–								

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IPR	POOR	POOR	FAIR	–	–	FAIR	POOR	V. POOR	POOR	–	V. POOR	–
NIRR	POOR	POOR	FAIR	–	–	FAIR	POOR	V. POOR	POOR	–	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		C	VFSL	RARE			
BIG SAGEBRUSH	ARTR2	10	10	–			
BLUE GRAMA	BOGR2	10	10	20			
CUSICK BLUEGRASS	POCU3	5		–			
GREEN NEEDLEGRASS	STVI4	15	10	–			
LITTLE BLUESTEM	ANSC2		5	–			
NEEDLEANDTHREAD	STCO4		15	–			
PRAIRIE JUNEGRASS	KOCR	5		–			
SANDBERG BLUEGRASS	POSE	5		–			
THICKSPIKE WHEATGRASS	AGDA	5	5	–			
WESTERN WHEATGRASS	AGSM	30	25	20			
OTHER PERENNIAL GRASSES	PPGG	10	10	–			
OTHER PERENNIAL FORBS	PPFF	5	10	–			
ALKALI SACATON	SPAI			50			
BUFFALOGRASS	BUDA			5			
GALLETA	HIJA			5			
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		1800	2000	1800			
NORMAL YEARS		1300	1500	1200			
UNFAVORABLE YEARS		750	850	600			

FOOTNOTES

WY0088

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 60, 48
REV. JFY, 1-80
USTOLLIC NATRARGIDS, FINE, MONTMORILLONITIC, MESIC

ARVADA SERIES

THE ARVADA SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM AND ALLUVIUM ON UPLANDS AND ALLUVIAL FANS. ELEVATION IS 4000 TO 5000 FEET. PRECIPITATION IS 12 TO 14 INCHES. MEAN ANNUAL SOIL TEMPERATURE IS ABOUT 48F., AND FROST-FREE SEASON IS 100 TO 130 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT GRAY, FINE SANDY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS BROWN, CLAY TO CLAY LOAM ABOUT 16 INCHES THICK. THE SUBSTRATUM IS LIGHT YELLOWISH-BROWN, CLAY LOAM TO 60 INCHES OR MORE. SLOPES ARE 9 TO 25 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	FSL	SM-SC, SM	A-4	0	80-100	75-100	60-80	35-50	20-25	5-10
0-4	L	CL-ML	A-4	0	90-100	90-100	85-95	60-75	15-25	5-10
4-14	C, SICL, CL	CL, CH	A-7	0	80-100	75-100	70-100	65-95	40-65	20-35
14-60	CL, SICL, C	CL	A-7	0	80-100	75-100	70-100	55-80	40-45	20-25

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-4	10-20		2.0-6.0	0.13-0.15	6.6-9.0	<4	LOW	.24	5	3	.5-1	HIGH	MODERATE
0-4	15-27		0.6-2.0	0.16-0.18	6.6-9.0	<4	LOW	.32	5	5	.5-1		
4-14	35-45		<0.06	0.07-0.09	>7.8	<4	HIGH	.32					
14-60	28-45		0.06-0.2	0.09-0.11	>7.8	<8	HIGH	.32					

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENT'L FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INIT. (IN)	TOTAL (IN)		
NONE			>6.0			-		>60		-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY, SLOPE
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL, SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SLOPE, SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL, SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH, SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH, SLOPE, SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-DROUGHTY 8-15%: MODERATE-DROUGHTY, SLOPE 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH, SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-THIN LAYER 15+%: POOR-THIN LAYER, SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SLIGHT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	L: DROUGHTY, PERCS SLOWLY FSL: DROUGHTY, SOIL BLOWING, PERCS SLOWLY
TERRACES AND DIVERSIONS	0-8% L: PERCS SLOWLY 8+% L: SLOPE, PERCS SLOWLY 0-8% FSL: SOIL BLOWING, PERCS SLOWLY 8+% FSL: SLOPE, SOIL BLOWING, PERCS SLOWLY
GRASSED WATERWAYS	0-8%: DROUGHTY, PERCS SLOWLY 8+%: SLOPE, DROUGHTY, PERCS SLOWLY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% FSL: MODERATE-PERCS SLOWLY 8-15% FSL: MODERATE-SLOPE,PERCS SLOWLY 0-8% L: MODERATE-PERCS SLOWLY,DUSTY 8-15% L: MODERATE-SLOPE,PERCS SLOWLY,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-PERCS SLOWLY 2-6%: MODERATE-PERCS SLOWLY,SLOPE 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% FSL: MODERATE-PERCS SLOWLY 8-15% FSL: MODERATE-SLOPE,PERCS SLOWLY 0-8% L: MODERATE-PERCS SLOWLY,DUSTY 8-15% L: MODERATE-SLOPE,PERCS SLOWLY,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% FSL: SLIGHT 15-25% FSL: MODERATE-SLOPE 0-15% L: MODERATE-DUSTY 15-25% L: MODERATE-SLOPE,DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	7S															
6-25%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	POOR	-	-	V. POOR	POOR	V. POOR	V. POOR	-	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: PE31	PE31	MOD ALKALI	SLI ALKALI	
ALKALI SACATON	SPAI	10	-	15	-	
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5	-	5	5	
GARDNER SALTBUSH	ATNU2	30	5	5	5	
GREASEWOOD	SARCO	10	-	25	20	
INLAND SALTGRASS	DIST	10	5	20	5	
WESTERN WHEATGRASS	AGSM	20	20	10	15	
WINTERFAT	EULA5	5	-	5	-	
SHADSCALE	ATCO	10	-	-	10	
BLUE GRAMA	BOGR2		40			
BUFFALOGRASS	BUDA		15			
SEDGE	CAREX		5			
OTHER SHRUBS	SSSS		10			
BIG SAGEBRUSH	ARTR2			-	20	
POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
FAVORABLE YEARS		650	840	600	900	
NORMAL YEARS		500	700	450	650	
UNFAVORABLE YEARS		250	420	300	500	

FOOTNOTES

WY0169

SOIL INTERPRETATIONS RECORD

MLRA(S): 43
REV. FS-JFY. 1-80
ARGIC PACHIC CRYOBOROLLS, FINE-LOAMY, MIXED

BACHUS SERIES

THE BACHUS SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SANDSTONE ON UPLANDS. ELEVATION IS 7500 TO 9000 FEET. PPT IS 20 INCHES AND MAST IS 41F. TYPICALLY THE SURFACE LAYER IS DARK GRAYISH BROWN LOAM ABOUT 17 INCHES THICK. THE SUBSOIL IS BROWN LOAM ABOUT 14 INCHES THICK AND IS UNDERLAIN BY HARD SANDSTONE AT A DEPTH OF 31 INCHES. SLOPES RANGE FROM 0 TO 25 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-17	L	ML, CL-ML	A-4	0-5	80-100	80-100	70-85	50-70	<25	NP-5
17-31	L, CL	CL	A-6	0-10	80-100	80-100	75-90	60-75	30-35	10-15
31	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-17	15-25		0.6-2.0	0.16-0.18	5.6-6.5	<2	LOW	.32	2	5	2-3	HIGH	LOW
17-31	18-35		0.6-2.0	0.16-0.18	5.6-6.5	<2	LOW	.32					
31													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		20-40	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-DEPTH TO ROCK 4-8%: MODERATE-SLOPE,DEPTH TO ROCK 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-DEPTH TO ROCK,LOW STRENGTH, SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-THIN LAYER 8-15%: MODERATE-SLOPE,THIN LAYER 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-AREA RECLAIM
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-SMALL STONES 15+%: POOR-SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE,DEPTH TO ROCK 3-8%: MODERATE-SEEPAGE,DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DEPTH TO ROCK 3+%: DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE, SMALL STONES, DEPTH TO ROCK 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	5
COLUMBIA NEEDLEGRASS	STCO3	15
IDAHO FESCUE	FEID	25
MOUNTAIN BROME	BRCA5	10
SNOWBERRY 1/	SYMPH	5
SPIKE-FESCUE	HEKI	5
THICKSPIKE WHEATGRASS	AGDA	15
OTHER ANNUAL GRASSES	AAGG	10
OTHER ANNUAL FORBS	AAFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		3000
NORMAL YEARS		2500
UNFAVORABLE YEARS		1800

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

SOIL INTERPRETATIONS RECORD

KEYING ONLY — RECORD NO. — CONTROL WORD: MLRA 001, STATE 011

MLRA(S) 33, 46 | KIND OF UNIT VARIANT | UNIT NAME BACHUS
STATE WYOMING | RECORD NO. | AUTHOR(S) JWW, JFY | DATE 2-82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021: ARGIC PACHIC CRYOBOROLLS, FINE-LOAMY, MIXED

DESCR 031: BACHUS VARIANT SOILS ARE DEEP, WELL DRAINED SOILS FORMED IN MATERIAL DERIVED FROM SANDSTONE. THEY ARE ON DISSIOPES IN THE MOUNTAINS. ELEVATION IS 7,500 TO 8,600 FEET. PPT IS 15 TO 19 INCHES. MAST IS 40 TO 42 F. FFS IS LESS THAN 60 DAYS. TYPICALLY, THE SURFACE LAYER IS VERY DARK GRAYISH BROWN LOAM 5 INCHES THICK. THE SUBSOIL IS DARK BROWN LOAM 15 INCHES THICK OVER VERY COBBLY CLAY LOAM 11 INCHES THICK. THE SUBSTRATUM IS YELLOWISH BROWN VERY COBBLY CLAY LOAM 6 INCHES THICK OVER EXTREMELY COBBLY CLAY LOAM 5 INCHES THICK. HARD SANDSTONE IS AT 42 INCHES. SLOPES RANGE FROM 2 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041	0-5	L	ML	A-4	0-5	95-100	85-100	65-80	50-60	20-30	5-10
2	5-20	L, CL	CL	A-6	0-15	90-100	80-100	65-85	50-60	30-40	10-20
3	20-31	CBV-CL	CL, GC	A-6, A-7	45-65	85-95	70-90	55-70	50-60	35-45	15-20
4	31-37	CBV-CL, CBV-L	GC, CL	A-6	45-65	85-95	70-90	50-65	45-55	30-40	10-20
5	37-42	CBX-CL, CBX-L	GC, CL	A-6	75-90	85-95	70-90	50-60	45-55	30-40	10-20
6	42	UWB									

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
PROP 051	SAME DEPTH AS ABOVE	15-25		0.6-6.0	0.16-0.18	6.1-7.3	<2	LOW	.32	3	5	2-3	HIGH	LOW
2		22-30		0.6-2.0	0.17-0.20	6.1-7.3	<2	MODERATE	.37					
3		28-38		0.6-2.0	0.06-0.08	6.1-7.3	<2	MODERATE	.05					
4		25-35		0.6-2.0	0.05-0.07	5.6-7.3	<2	MODERATE	.05					
5		20-30		0.2-0.6	0.02-0.05	5.6-7.3	<2	MODERATE	.02					
6														

	FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INITIAL (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			>6.0			—		40-60	HARD	—		B	MODERATE

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	2-15%: SEVERE - PERCS SLOWLY 15-20%: SEVERE - SLOPE, PERCS SLOWLY
LAGOON 081	SEWAGE LAGOONS	2-7%: MODERATE - SLOPE, DEPTH TO ROCK, SEEPAGE 7-20%: SEVERE - SLOPE
TRENCH 091	SANITARY LANDFILL (TRENCH)	2-15%: SEVERE - DEPTH TO ROCK, LARGE STONES 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, LARGE STONES
SANARE 101	SANITARY LANDFILL (AREA)	2-8%: MODERATE - DEPTH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 15-20%: SEVERE - SLOPE
COVER 111	DAILY COVER FOR LANDFILL	2-15%: SEVERE - LARGE STONES 15-20%: SEVERE - SLOPE, LARGE STONES

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	2-15%: SEVERE - LARGE STONES 15-20%: SEVERE - SLOPE, LARGE STONES
DWEL 131	DWELLINGS WITHOUT BASEMENTS	2-15%: SEVERE - LARGE STONES 15-20%: SEVERE - SLOPE, LARGE STONES
DWEL 141	DWELLINGS WITH BASEMENTS	2-15%: SEVERE - LARGE STONES 15-20%: SEVERE - SLOPE, LARGE STONES
BLDGS 151	SMALL COMMERCIAL BUILDINGS	2-8%: SEVERE - LARGE STONES 8-20%: SEVERE - SLOPE, LARGE STONES
ROADS 161	LOCAL ROADS AND STREETS	2-15%: SEVERE - LOW STRENGTH 15-20%: SEVERE - SLOPE, LOW STRENGTH
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	2-15%: SEVERE - LARGE STONES 15-20%: SEVERE - SLOPE, LARGE STONES

REGIONAL INTERPRETATIONS

	FOOTNOTES	
REGION 181		

KEYING ONLY

	FILL	SAND	GRAVEL	SOIL	PONDRS	DIKES	PONDAQ	DRAIN	IRRIG	TERRAC	WATERW
1	191	201	211	221	231	241	251	261	271	281	
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5		5

CONSTRUCTION MATERIAL

FOOTNOTES	
ROADFILL	POOR - LOW STRENGTH
SAND	IMPROBABLE - EXCESS FINES
GRAVEL	IMPROBABLE - EXCESS FINES
TOPSOIL	2-15%: POOR - LARGE STONES 15-20%: POOR - SLOPE, LARGE STONES

WATER MANAGEMENT

FOOTNOTES	
POND RESERVOIR AREA	2-3%: MODERATE - SEEPAGE, DEPTH TO ROCK 3-8%: MODERATE - SLOPE, SEEPAGE, DEPTH TO ROCK 8-20%: SEVERE - SLOPE
EMBANKMENTS DIKES AND LEVEES	MODERATE - THIN LAYER
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	2-3%: LARGE STONES 3-20%: SLOPE, LARGE STONES
TERRACES AND DIVERSIONS	2-8%: LARGE STONES, ERODES EASILY 8-20%: SLOPE, LARGE STONES, ERODES EASILY
GRASSED WATERWAYS	2-8%: LARGE STONES, ERODES EASILY 8-20%: SLOPE, LARGE STONES, ERODES EASILY

UNIT NAME: BACHUS VARIANT — RECREATIONAL DEVELOPMENT
UNIT MODIFIER:

KEYING ONLY RECORD NO.	CONTROL WORD	NO.	FOOTNOTE
	CAMPS	301	
		2	2-8%: SLIGHT
		3	8-15%: MODERATE-SLOPE
	CAMP AREAS	4	15-20%: SEVERE-SLOPE
		5	
	PICNIC	311	
		2	2-8%: SLIGHT
		3	8-15%: MODERATE-SLOPE
	PICNIC AREAS	4	15-20%: SEVERE-SLOPE
		5	

KEYING ONLY			FOOTNOTE
PLAYGD		321	
		2	2-6%: MODERATE-SLOPE, DUSTY
		3	6-10%: SEVERE-SLOPE
	PLAYGROUNDS	4	
		5	
PATHS		331	
		2	2-15%: MODERATE-DUSTY
		3	15-20%: MODERATE-SLOPE, DUSTY
	PATHS AND TRAILS	4	
		5	

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

FOOTNOTE

		CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
CROPHD	451																	
	2																	
	3																	
CROPS	341	2-15%	6E	6E														
	2	15-20%	6E	-														
	3																	
	4																	
	5																	
	6																	
	7																	
	8																	
	9																	
	351																	
	2																	
	3																	

WOODLAND SUITABILITY

FOOTNOTE

		CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
WOODS	361								NONE		
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	371										
	2										
	3										
	4										
	5										
	6										

WINDBREAKS

FOOTNOTE

		CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
WINDBK	381		NONE							
	2									
	3									
	4									
	5									
	6									

WILDLIFE HABITAT SUITABILITY

FOOTNOTE

		CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF	391	ALL	POOR	FAIR	GOOD	-	GOOD	GOOD	V. POOR	V. POOR	GOOD	POOR	V. POOR	GOOD
	2													
	3													
	4													
	5													
	6													

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

FOOTNOTE

		COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
PHASE	401			
	2			
PLANT	411	IDAHO FESCUE	FEID	20
	2	BIG SAGEBRUSH	ARTR2	10
	3	PRAIRIE JUNEGRASS	KOCR	5
	4	COLUMBIA NEEDLEGRASS	STCO3	10
	5	BLUEGRASS	POA++	5
	6	WESTERN YARROW	ACMIL	5
	7	LUPINES	LUPIN	5
	8	SPIKE FESCUE	HEKI	5
	9			
	421			
	2			
	3			
	4			
	5			
	6			

		POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
PRODUC	431	FAVORABLE YEARS	2000
	2	NORMAL YEARS	1600
	3	UNFAVORABLE YEARS	900

		SYM.	FOOTNOTES
NOTES	441		
	2		
	3		
	4		
	5		
	6		
	7		

MLRA(S): 34
REV. JFY,FS. 2-77

BESSEMER SERIES

USTOLLIC HAPLARGIDS. CLAYEY OVER LOAMY-SKELETAL. MONTMORILLONITIC. MESIC

THE BESSEMER SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON HIGH TERRACES OR ALLUVIAL FANS. SLOPES ARE 0 TO 15 PERCENT. ELEVATION IS 5,000 TO 6,000 FEET. PPT IS ABOUT 13 INCHES. MAST IS ABOUT 54 F.. AND THE FFS IS 110 TO 130 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY CLAY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS ABOUT 18 INCHES THICK; THE UPPER 3 INCHES IS GRAYISH-BROWN CLAY LOAM; THE NEXT 11 INCHES IS BROWN CLAY AND THE LOWER 4 INCHES IS LIGHT OLIVE BROWN CLAY LOAM. THE SUBSTRATUM IS LIGHT BROWNISH-GRAY VERY GRAVELLY CLAY LOAM TO 60 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	CL	CL	A-6	0	75-100	75-100	70-100	55-75	35-40	15-20
7-22	C, CL	CL, CH	A-7	0	75-100	75-100	70-100	55-80	40-55	20-30
22-60	GRV-CL	GC	A-2	0-25	20-50	20-50	20-50	15-35	35-40	15-20

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-7			0.6-2.0	0.19-0.21	6.6-7.8	<2	MODERATE	.32	5	6		HIGH	LOW
7-22			0.06-0.2	0.14-0.21	6.6-7.8	<2	HIGH	.37					
22-60			0.2-0.6	0.04-0.10	7.9-9.0	<2	MODERATE	.24					

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		2+6		-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-7%: SEVERE-SMALL STONES 7+%: SEVERE-SLOPE,SMALL STONES
SANITARY LANDFILL (TRENCH)	MODERATE-TOO CLAYEY
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	POOR-SHRINK-SWELL,LOW STRENGTH
SAND	UNSUITED-EXCESS FINES
GRAVEL	UNSUITED-EXCESS FINES
TOPSOIL	POOR-TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: FAVORABLE 2+%: SLOPE
EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	0-3%: PERCS SLOWLY 3+%: SLOPE,PERCS SLOWLY
IRRIGATION	0-2%: PERCS SLOWLY 2+%: SLOPE,PERCS SLOWLY
TERRACES AND DIVERSIONS	0-10%: PERCS SLOWLY,SMALL STONES 10+%: SLOPE,PERCS SLOWLY,SMALL STONES
GRASSED WATERWAYS	0-2%: PERCS SLOWLY 2+%: SLOPE,PERCS SLOWLY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	MODERATE-SMALL STONES
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SLOPE,SHRINK-SWELL
LOCAL ROADS AND STREETS	SEVERE-SHRINK-SWELL,LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-SLOPE,TOO CLAYEY	PLAYGROUNDS	0-2%: MODERATE-TOO CLAYEY 2-6%: MODERATE-SLOPE,TOO CLAYEY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-SLOPE,TOO CLAYEY	PATHS AND TRAILS	MODERATE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		BARLEY (BU)		OATS (BU)		PASTURE (AUM)							
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	6E	3S	-	4.0	-	90	-	80	-	7						
3-6%	6E	3E	-	3.5	-	80	-	70	-	6						
6-10%	6E	4E	-	3.0	-	60	-	55	-	5						
10-15%	6E	6E	-	2.5	-	-	-	-	-	4						

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL IRR	SIBERIAN ELM GOLDEN WILLOW GREEN ASH		PONDEROSA PINE ROCKY MT. JUNIPER		RUSSIAN-OLIVE LILAC		COMMON CHOKECHERRY BLUE SPRUCE	

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-10% IRR	FAIR	FAIR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	-
10-15% IRR	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	-
0-8% NIRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR
8-15% NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL				
BIG SAGEBRUSH	ARTR2	10				
BLUE GRAMA	BOGR2	10				
CUSICK BLUEGRASS	POCU3	5				
GREEN NEEDLEGRASS	STVI4	15				
PRAIRIE JUNEGRASS	KOCR	5				
SANDBERG BLUEGRASS	POSE	5				
THICKSPIKE WHEATGRASS	AGDA	5				
WESTERN WHEATGRASS	AGSM	30				
OTHER PERENNIAL GRASSES	PPGG	5				
OTHER PERENNIAL FORBS	PPFF	10				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
FAVORABLE YEARS		1,800				
NORMAL YEARS		1,300				
UNFAVORABLE YEARS		750				

FOOTNOTES

SOIL INTERPRETATIONS RECORD

MLRA(S): 34, 58, 60
REV. JFY-FS, 1-80
USTOLLIC PALEARGIDS, FINE, MONTMORILLONITIC, MESIC

BIDMAN SERIES

THE BIDMAN SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND FOOT SLOPES. ELEVATION IS 3500 TO 6000 FEET. PPT IS ABOUT 12 INCHES, MAST IS ABOUT 51 F., AND THE FFS IS 100 TO 130 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH GRAY LOAM ABOUT 5 INCHES THICK. THE SUBSOIL IS ABOUT 21 INCHES THICK; THE UPPER 13 INCHES IS BROWN CLAY; THE LOWER 8 INCHES IS LIGHT YELLOWISH BROWN CLAY LOAM. THE SUBSTRATUM IS LIGHT OLIVE BROWN CLAY LOAM TO 60 INCHES. SLOPES ARE 0 TO 10 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-5	L, FSL	ML, SM	A-4	0	80-100	80-100	65-90	40-75	30-35	5-10
0-5	CL	CL	A-6, A-7	0	80-100	80-100	75-100	65-80	35-45	20-30
5-18	C, CL	CH	A-7	0	80-100	80-100	80-100	70-90	50-60	30-40
18-60	CL, L	CL	A-6, A-7	0	80-100	80-100	75-100	65-80	35-45	20-30
60-70	SCL	CL, SC	A-6	0	80-100	80-100	60-80	45-55	20-30	10-15

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-5	10-20		0.6-2.0	0.16-0.18	6.1-7.3	-	LOW	.28	5	6	1-2	HIGH	LOW
0-5	27-35		0.2-0.6	0.19-0.21	6.1-7.3	-	HIGH	.32	5	6	1-2		
5-18	35-50		0.06-0.2	0.14-0.16	6.6-7.8	<2	HIGH	.32					
18-60	25-35		0.2-0.6	0.19-0.21	7.9-9.0	<2	HIGH	.43					
60-70	20-30		0.6-2.0	0.14-0.16	7.9-9.0	<2	MODERATE	.32					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-10%: FAIR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	FAIR-SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SLIGHT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: PERCS SLOWLY 3+%: PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	0-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY,PERCS SLOWLY 8+%: SLOPE,ERODES EASILY,PERCS SLOWLY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% FSL,CL: SLIGHT 8-10% FSL,CL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-10% L: MODERATE-SLOPE,DUSTY	PLAYGROUNDS	0-2% FSL,CL: MODERATE-SMALL STONES 2-6% FSL,CL: MODERATE-SLOPE,SMALL STONES 0-2% L: MODERATE-SMALL STONES,DUSTY 2-6% L: MODERATE-SLOPE,SMALL STONES,DUSTY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% FSL,CL: SLIGHT 8-10% FSL,CL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-10% L: MODERATE-SLOPE,DUSTY	PATHS AND TRAILS	FSL,CL: SLIGHT L: MODERATE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		OATS (BU)		BARLEY (BU)		PASTURE (AUM)		WHEAT, WINTER (BU)		GRASS HAY (TONS)			
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	3S	3S	1.5	4.0	50	80	35	70	1.0	7	35	-	1.0	-		
3-6%	3E	3E	1.5	3.5	50	70	35	65	1.0	6	35	-	1.0	-		
6+%	4E	4E	1.0	3.0	30	60	25	60	0.5	5	20	-	0.7	-		

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL	CHINESE ELM	25	PONDEROSA PINE	16	LILAC	10	RUSSIAN-OLIVE	10
	GREEN ASH	16	ROCKY MT. JUNIPER	8	COMMON CHOKECHERRY	10	SIBERIAN PEASHRUB	10

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	FAIR	FAIR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	
		DRY	MOIST
BIG SAGEBRUSH	ARTR2	10	5
BLUE GRAMA	BOGR2	10	5
GREEN NEEDLEGRASS	STVI4	10	15
LITTLE BLUESTEM	ANSC2	5	10
NEEDLEANDTHREAD	STCO4	15	10
THICKSPIKE WHEATGRASS	AGDA	5	-
WESTERN WHEATGRASS	AGSM	25	20
OTHER PERENNIAL GRASSES	PPGG	10	15
OTHER PERENNIAL FORBS	PPFF	10	10
SIDEOATS GRAMA	BOCU		10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
FAVORABLE YEARS		2000	2300
NORMAL YEARS		1500	1900
UNFAVORABLE YEARS		850	1500

FOOTNOTES

MLRA(S): 32
JFY, 3-78
TYPIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), MESIC, SHALLOW

BIRDSLEY SERIES

THE BIRDSLEY SOILS ARE WELL-DRAINED. SLOPES ARE 0 TO 10 PERCENT. THEY ARE ON UPLANDS AT ELEVATIONS OF 5000 TO 5500 FEET. THE MEAN ANNUAL PRECIPITATION IS ABOUT 9 INCHES. THE MEAN ANNUAL SOIL TEMPERATURE IS ABOUT 51 F. THE FROST-FREE SEASON IS 120 TO 140 DAYS. IN A TYPICAL PROFILE, THE SOIL IS LIGHT BROWNISH-GRAY CLAY LOAM, UNDERLAIN BY CLAY SHALE AT ABOUT 12 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USCA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-12	CL	CL	A-6, A-7	0	95-100	95-100	90-100	70-80	35-45	15-20
12	WB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-12	<0.06	0.07-0.09	>9.0	<4	MODERATE	HIGH	HIGH	.43	2	4
12										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY,DEPTH TO ROCK
SEWAGE LAGOON AREAS	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8+%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-THIN LAYER,AREA RECLAIM

SOURCE MATERIAL

ROADFILL	POOR-LOW STRENGTH,THIN LAYER,AREA RECLAIM
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	POOR-EXCESS SODIUM,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: DEPTH TO ROCK 2+%: SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	DEPTH TO ROCK,PERCS SLOWLY
GRASSED WATERWAYS	EXCESS SODIUM,PERCS SLOWLY,ROOTING DEPTH

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	MODERATE-DEPTH TO ROCK,TOO CLAYEY
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-LOW STRENGTH,SHRINK-SWELL, DEPTH TO ROCK 8-10%: MODERATE-SLOPE,LOW STRENGTH, DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-6%: MODERATE-LOW STRENGTH,SHRINK-SWELL, DEPTH TO ROCK 8-10%: MODERATE-SLOPE,LOW STRENGTH, DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-LOW STRENGTH,SHRINK-SWELL, DEPTH TO ROCK 4-6%: MODERATE-SLOPE,LOW STRENGTH, DEPTH TO ROCK 6+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	SEVERE-PERCS SLOWLY	PLAYGROUNDS	0-6%: SEVERE-PERCS SLOWLY,DEPTH TO ROCK 6+%: SEVERE-SLOPE,PERCS SLOWLY,DEPTH TO ROCK
PICNIC AREAS	MODERATE-TOO CLAYEY	PATHS AND TRAILS	MODERATE-TOO CLAYEY

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY																	
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	75																	

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WIND TH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	V. POOR	-	-	V. POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIRDFOOT SAGEBRUSH	ARPE6	40
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
INDIAN RICEGRASS	CRHY	5
BUD SAGEBRUSH	ARSP5	10
GARDNER SALTBUSH	ATNU2	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	10
WINTERFAT	EURO T	5
OTHER ANNUAL GRASSES	AAGG	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		300
NORMAL YEARS		200
UNFAVORABLE YEARS		100

FOOTNOTES

WY0049

SOIL INTERPRETATIONS RECORD

MLRA(S): 33, 34, 43, 46, 47, 48, 49
REV. JFY-FS, 9-80
USTIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), FRIGID, SHALLOW

BLAZON SERIES

THE BLAZON SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SEDIMENTARY ROCKS. ELEVATION IS 5500 TO 7500 FEET. PPT IS ABOUT 10 INCHES, MAST IS ABOUT 45 F., AND THE FFS IS 60 TO 110 DAYS. TYPICALLY, THE PROFILE IS LIGHT BROWNISH GRAY CLAY LOAM AND IS UNDERLAIN BY BEDROCK AT A DEPTH OF 14 INCHES. SLOPES ARE 0 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	CL	CL	A-6	0-5	80-100	80-100	75-95	60-75	35-40	15-20
0-4	L	ML, CL-ML	A-4	0-5	80-100	80-100	70-90	55-70	25-35	5-10
0-4	GR-CL, CN-L	GM	A-6	5-10	55-70	55-70	50-65	40-50	35-40	10-15
4-14	CN-CL, SH-CL	GM	A-6	5-10	55-70	55-70	50-65	40-50	35-40	10-15
14	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-4	27-35		0.2-0.6	0.19-0.21	7.9-9.0	2-4	MODERATE	.43	1	4L	.5-1	HIGH	LOW
0-4	18-27		0.6-2.0	0.16-0.18	7.9-9.0	2-4	LOW	.32	1	4L	.5-1		
0-4	18-35		0.2-0.6	0.14-0.16	7.9-9.0	2-4	MODERATE	.32	1	4L	.5-1		
4-14	27-35		0.2-0.6	0.14-0.16	7.9-9.0	2-4	MODERATE	.32					
14													

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25% L,GR-CL,CN-L: POOR-AREA RECLAIM 25+% L,GR-CL,CN-L: POOR-AREA RECLAIM,SLOPE 0-25% CL: POOR-AREA RECLAIM,LOW STRENGTH 25+%CL: POOR-AREA RECLAIM,LOW STRENGTH,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15% CL,L: POOR-AREA RECLAIM 15+% CL,L: POOR-AREA RECLAIM,SLOPE 0-15% GR,CN: POOR-AREA RECLAIM,SMALL STONES 15+% GR,CN: POOR-AREA RECLAIM,SMALL STONES, SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	CL,GR-CL,CN-L: MODERATE-PIPING L: SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% L,GR-CL,CN-L: DEPTH TO ROCK 3+% L,GR-CL,CN-L: DEPTH TO ROCK,SLOPE 0-3% CL: DEPTH TO ROCK,ERODES EASILY 3+% CL: DEPTH TO ROCK,SLOPE,ERODES EASILY
TERRACES AND DIVERSIONS	0-8% L,GR-CL,CN-L: DEPTH TO ROCK 8+% L,GR-CL,CN-L: SLOPE,DEPTH TO ROCK 0-8% CL: DEPTH TO ROCK,ERODES EASILY 8+% CL: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	0-8% L,GR-CL,CN-L: DEPTH TO ROCK 8+% L,GR-CL,CN-L: SLOPE,DEPTH TO ROCK 0-8% CL: ERODES EASILY,DEPTH TO ROCK 8+% CL: SLOPE,ERODES EASILY,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-DEPTH TO ROCK,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-DEPTH TO ROCK 4-8%: MODERATE-DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8% L,GR-CL,CN-L: SLIGHT 8-15% L,GR-CL,CN-L: MODERATE-SLOPE 15+% L,GR-CL,CN-L: SEVERE-SLOPE 0-15% CL: SEVERE-LOW STRENGTH 15+% CL: SEVERE-SLOPE,LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

BLAZON SERIES WY004

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-DEPTH TO ROCK,SLOPE
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15% L,GR-CL,CN-L: SLIGHT 15-25% L,GR-CL,CN-L: MODERATE-SLOPE 25+% L,GR-CL,CN-L: SEVERE-SLOPE 0-25% CL: SEVERE-ERODES EASILY 25+% CL: SEVERE-SLOPE,ERODES EASILY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	7S	6S	-	1.5	-	3.0										
3-10%	7E	6E	-	1.5	-	3.0										
10+%	7E	-	-	-	-	-										

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	-
NIRR	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	V. POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
GARDNER SALTBUSH	ATNU2	5
INDIAN RICEGRASS	ORHY	10
LOW RABBITBRUSH	CHVI2	5
LOW SAGEBRUSH	ARAR8	5
MUTTON BLUEGRASS	POFE	5
NEEDLELEAF SEDGE	CAEL2	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	40
WINTERFAT	EULA5	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1000
NORMAL YEARS		750
UNFAVORABLE YEARS		500

FOOTNOTES

C00567 SOIL INTERPRETATIONS RECORD

MLRA(S): 48
REV. RD. 3-78
BORCLLIC HAPLARGIDS, FINE, MONTMORILLONITIC

BOETTCHER SERIES
STONY

THE BOETTCHER CONSISTS OF MODERATELY DEEP WELL DRAINED SOILS FORMED IN CALCAREOUS CLAY WEATHERED FROM SHALE ON HILLS AND RIDGES. TYPICALLY, THE SURFACE LAYER IS STONY LOAM ABOUT 2 INCHES THICK. THE UNDERLYING LAYER IS CLAY LOAM ABOUT 31 INCHES THICK AND OVERLIES SHALE AT 33 INCHES. VEGETATION IS MOSTLY GRASSES AND SHRUBS. AVERAGE ANNUAL PRECIPITATION IS ABOUT 9 INCHES. SLOPES ARE 8 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-2	SL-L	CL-ML	A-4	10-20	95-100	90-100	85-100	60-75	20-30	5-10
2-33	CL, C	CL, CH	A-7	0-5	85-100	80-100	75-100	65-85	40-60	25-40
33	WB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-2	20-25		0.6-2.0	0.14-0.16	7.4-7.8	-	MODERATE	.32	2	8	.5-2	HIGH	LOW
2-33	35-50		0.06-0.2	0.14-0.16	7.4-8.4	<2	HIGH	.32					
33													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		20-40	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	8-15%: SEVERE-PERCS SLOWLY, DEPTH TO ROCK 15+%: SEVERE-SLOPE, PERCS SLOWLY, DEPTH TO ROCK
SEWAGE LAGOON AREAS	SEVERE-SLOPE, DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	8-25%: SEVERE-DEPTH TO ROCK, TOO CLAYEY 25+%: SEVERE-SLOPE, DEPTH TO ROCK, TOO CLAYEY
SANITARY LANDFILL (AREA)	8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	8-15%: POOR-TOO CLAYEY, THIN LAYER, AREA RECLAIM 15+%: POOR-SLOPE, TOO CLAYEY, THIN LAYER

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	8-15%: MODERATE-TOO CLAYEY, DEPTH TO ROCK, SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	8-15%: SEVERE-SHRINK-SWELL, LOW STRENGTH 15+%: SEVERE-SHRINK-SWELL, LOW STRENGTH, SLOPE
DWELLINGS WITH BASEMENTS	8-15%: SEVERE-SHRINK-SWELL, LOW STRENGTH 15+%: SEVERE-SLOPE, SHRINK-SWELL, LOW STRENGTH
SMALL COMMERCIAL BUILDINGS	SEVERE-SHRINK-SWELL, LOW STRENGTH, SLOPE
LOCAL ROADS AND STREETS	8-15%: SEVERE-SHRINK-SWELL, LOW STRENGTH 15+%: SEVERE-SLOPE, SHRINK-SWELL, LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

CONSTRUCTION MATERIAL

ROADFILL	8-25%: POOR-THIN LAYER, LOW STRENGTH, SHRINK-SWELL 25+%: POOR-SLOPE, THIN LAYER, LOW STRENGTH
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	8-15%: POOR-TOO CLAYEY 15+%: POOR-SLOPE, TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE, DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER, HARD TO PACK
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	SLOPE, PERCS SLOWLY, DEPTH TO ROCK
IRRIGATION	SLOPE, LARGE STONES, PERCS SLOWLY
TERRACES AND DIVERSIONS	SLOPE, PERCS SLOWLY, DEPTH TO ROCK
GRASSED WATERWAYS	SLOPE, PERCS SLOWLY, ROOTING DEPTH

REGIONAL INTERPRETATIONS

BOETTCHER SERIES
STONY

CO0567

RECREATIONAL DEVELOPMENT

CAMP AREAS	8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	SEVERE-SLOPE
PICNIC AREAS	8-15%: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	8-15%: MODERATE-DUSTY 15-25%: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
WARM									
COOL							PINYON UTAH JUNIPER		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: WARM
BLUEBUNCH WHEATGRASS	AGSP	30
BIG SAGEBRUSH	ARTR2	15
WESTERN WHEATGRASS	AGSM	10
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
INDIAN RICEGRASS	ORHY	5
NEEDLEANDTHREAD	STCO4	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		800
NORMAL YEARS		600
UNFAVORABLE YEARS		400

FOOTNOTES

NY0429

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 60
JFY-AGE: 10-78
LSTIC TORRIORTHENTS, FINE, MONTMORILLONITIC (CALCAREOUS), MESIC

BONE SERIES

THE BONE SERIES CONSIST OF VERY DEEP, WELL-DRAINED SOILS FORMING ALLUVIUM ON ALLUVIAL FANS AND VALLEY-FILLING SIDESLOPES. MAAT IS ABOUT 46 DEGREES F. PPT IS ABOUT 14 INCHES. THE SURFACE LAYER IS WHITE LOAM 2 INCHES THICK. THE SUBSOIL IS GRAYISH BROWN CLAY LOAM 3 INCHES THICK. THE SUBSTRATUM IS GRAYISH BROWN CLAY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-2	L, CL	CL-ML	A-4	0	95-100	95-100	85-95	65-75	20-30	5-10
0-2	FSL	SM	A-4	0	95-100	95-100	75-85	40-50	20-30	NP-5
2-5	CL, C	CL	A-6	0	95-100	95-100	90-100	70-80	30-40	11-15
5-60	CL, C	CL	A-6	0	95-100	95-100	90-100	70-80	30-40	10-15

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-2	20-30	-	0.2-0.6	0.17-0.19	6.1-8.4	<2	LOW	.32	5	6	<.5	HIGH	HIGH
0-2	15-20	-	2.0-6.0	0.13-0.15	6.1-8.4	<2	LOW	.28	5	3	<.5		
2-5	35-45	-	<0.06	0.04-0.06	6.6-9.0	4-8	MODERATE	.37					
5-60	35-45	-	<0.06	0.04-0.06	>8.4	>8	MODERATE	.37					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-EXCESS SALT 15+%: SEVERE-SLOPE,EXCESS SALT
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-TOO CLAYEY,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH 15+%: SEVERE-LOW STRENGTH,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-DROUGHTY 15+%: SEVERE-DROUGHTY,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-THIN LAYER 15+%: POOR-THIN LAYER,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-EXCESS SALT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	L,CL: DROUGHTY,PERCS SLOWLY FSL: DROUGHTY,SOIL BLOWING,PERCS SLOWLY
TERRACES AND DIVERSIONS	0-8% L,CL: ERODES EASILY 8+% L,CL: SLOPE,ERODES EASILY 0-8% FSL: ERODES EASILY,SOIL BLOWING 8+% FSL: SLOPE,ERODES EASILY,SOIL BLOWING
GRASSED WATERWAYS	0-8%: ERODES EASILY,DROUGHTY 8+%: SLOPE,ERODES EASILY,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% CL,FSL: MODERATE-PERCS SLOWLY 8-15% CL,FSL: MODERATE-SLOPE,PERCS SLOWLY 0-8% L: MODERATE-PERCS SLOWLY,DUSTY 8-15% L: MODERATE-SLOPE,PERCS SLOWLY,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% CL,FSL: MODERATE-PERCS SLOWLY 2-6% CL,FSL: MODERATE-SLOPE,PERCS SLOWLY 0-2% L: MODERATE-PERCS SLOWLY,DUSTY 2-6% L: MODERATE-SLOPE,PERCS SLOWLY,DUSTY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% CL,FSL: MODERATE-PERCS SLOWLY 8-15% CL,FSL: MODERATE-SLOPE,PERCS SLOWLY 0-8% L: MODERATE-PERCS SLOWLY,DUSTY 8-15% L: MODERATE-SLOPE,PERCS SLOWLY,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% CL,FSL: SLIGHT 15-20% CL,FSL: MODERATE-SLOPE 0-15% L: MODERATE-DUSTY 15-20% L: MODERATE-SLOPE,DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	7S															
3-10%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-3%	POOR	POOR	POOR	-	-	POOR	POOR	POOR	POOR	-	POOR	POOR
3-10%	POOR	POOR	POOR	-	-	POOR	POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSEN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
GREEN NEEDLEGRASS	STVI4	30
WESTERN WHEATGRASS	AGSM	20
BIG SAGEBRUSH	ARTR2	

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	1400
NORMAL YEARS	1150
UNFAVORABLE YEARS	950

FOOTNOTES

MLRA(S): 48
LF,LL, 5-74
BOROLLIC HAPLARGIDS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED

BOSLER SERIES

THE BOSLER SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON OLD HIGH TERRACES AND ALLUVIAL FANS. ELEVATION IS 6,500 TO 7,500 FEET. M.A.P. IS ABOUT 11 INCHES, M.A.S.T. IS 40 TO 43 F. AND F.F.S. IS 80 TO 110 DAYS. TYPICALLY, THE SURFACE LAYER IS GRAYISH BROWN SANDY LOAM ABOUT 3 INCHES THICK, THE SUBSOIL IS BROWN AND PALE BROWN SANDY CLAY LOAM ABOUT 18 INCHES THICK, AND THE SUBSTRATUM IS VERY PALE BROWN VERY GRAVELLY SAND TO 60 INCHES OR MORE. SLOPES ARE 2 TO 5 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	SL	SM, SM-SC	A-4	0	80-100	75-100	55-75	35-50	15-25	NP-7
3-21	SCL	SC	A-6	0	80-100	75-100	65-85	35-50	25-35	10-20
21-60	GRV-S	GP, GW	A-1	0	25-40	20-35	10-20	0-5	-	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-3	2.0-6.0	0.13-0.15	6.6-7.8	<2	LOW	HIGH	LOW	.20	3	-
3-21	0.6-2.0	0.16-0.18	7.9-9.0	<2	MODERATE	HIGH	LOW	.28		
21-60	6.0-20	0.03-0.05	7.9-9.0	<2	VERY LOW	HIGH	LOW	.10		

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INIT. (IN)	TOTAL (IN)		
NONE			>6.0			-		>60		-		B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS [1]	SLIGHT
SEWAGE LAGOON AREAS	SEVERE-SEEPAGE
SANITARY LANDFILL (TRENCH)	SEVERE-SEEPAGE
SANITARY LANDFILL (AREA)	SLIGHT
DAILY COVER FOR LANDFILL	FAIR-THIN LAYER

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-CUTBANKS CAVE,SMALL STONES
DWELLINGS WITHOUT BASEMENTS	SLIGHT
DWELLINGS WITH BASEMENTS	MODERATE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	2-4%: SLIGHT 4+%: MODERATE-SLOPE
LOCAL ROADS AND STREETS	MODERATE-SHRINK-SWELL,LOW STRENGTH, FROST ACTION

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	GOOD
SAND [2]	GOOD
GRAVEL	GOOD
TOPSOIL	FAIR-TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEEPAGE
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	SLOPE
IRRIGATION	SLOPE,DROUGHTY
TERRACES AND DIVERSIONS	FAVORABLE
GRASSED WATERWAYS	

RECREATION

CAMP AREAS	SLIGHT	PLAYGROUNDS	MODERATE-SLOPE
PICNIC AREAS	SLIGHT	PATHS AND TRAILS	SLIGHT

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)													
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E	6E		2.5												

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
PINE NEEDLEGRASS	STPI2	10
PRAIRIE JUNEGRASS	KOCR	10
NEEDLE-AND-THREAD	STCO4	5
BLUEBUNCH WHEATGRASS	AGSP	5
MUTTONGRASS	POFE	10
STREAMBANK WHEATGRASS	AGRI	10
BLUE GRAMA	BOGR2	5
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
BIG SAGEBRUSH	ARTR2	30
LOW RABBITBRUSH 1/	CAVIP2	5
BUCKWHEAT 1/	ERIOG	3
UNKNOWNS	UUUU	2
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1000
NORMAL YEARS		750
UNFAVORABLE YEARS		500

FOOTNOTES

WY0008

SOIL SURVEY INTERPRETATIONS

MLRA(S): 32
JEI,FS, 6-73

BRIBUTTE SERIES

TYPIC TORRIORTHENTS, CLAYEY, MONTMORILLONITIC (CALCAREOUS), MESIC, SHALLOW

THE BRIBUTTE SERIES ARE WELL TO MODERATELY WELL DRAINED SOILS FORMED IN RESIDUUM FROM VERY STRONGLY ALKALINE SHALE ON UPLANDS. SLOPES ARE 0 TO 60 PERCENT. ELEVATION IS 4,000 TO 5,500 FEET. PPT IS 5 TO 9 INCHES, MAST IS ABOUT 50F., AND THE FFS IS 120 TO 140 DAYS. TYPICALLY, THE PROFILE IS REDDISH BROWN CLAY ABOUT 12 INCHES THICK AND IS UNDERLAIN BY VERY STRONGLY ALKALINE SHALE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-12	C	CL, CH	A-7	0	75-100	75-100	70-100	65-95	45-65	25-35
12	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-12	0.06-0.2	0.10-0.14	>8.5	2-16	HIGH	HIGH	HIGH	.20	1	4
12										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6			-		10-20	RIPPABLE	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK,PERCS SLOWLY 15+%: SEVERE-SLOPE,DEPTH TO ROCK, PERCS SLOWLY
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	0-25%: SEVERE-DEPTH TO ROCK,TOO CLAYEY 25+%: SEVERE-SLOPE,DEPTH TO ROCK,TOO CLAYEY
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-15%: SEVERE-THIN LAYER,TOO CLAYEY 15+%: SEVERE-SLOPE,THIN LAYER,TOO CLAYEY

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-TOO CLAYEY 15+%: SEVERE-SLOPE,TOO CLAYEY
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SLOPE,SHRINK-SWELL
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SLOPE,SHRINK-SWELL
LOCAL ROADS AND STREETS	0-15%: SEVERE-SHRINK-SWELL,LOW STRENGTH 15+%: SEVERE-SLOPE,SHRINK-SWELL,LOW STRENGTH

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	0-25%: SEVERE-THIN LAYER,SHRINK-SWELL, LOW STRENGTH 25+%: SEVERE-SLOPE,THIN LAYER,SHRINK-SWELL
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	0-15%: POOR-TOO CLAYEY,EXCESS ALKALI 15+%: POOR-SLOPE,TOO CLAYEY,EXCESS ALKALI

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: DEPTH TO ROCK 2+%: SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,LOW STRENGTH,SHRINK-SWELL
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	0-10%: DEPTH TO ROCK,PERCS SLOWLY 10+%: SLOPE,DEPTH TO ROCK,PERCS SLOWLY
GRASSED WATERWAYS	

RECREATION

CAMP AREAS	0-15%: SEVERE-TOO CLAYEY 15+%: SEVERE-SLOPE,TOO CLAYEY	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK,TOO CLAYEY 6+%: SEVERE-SLOPE,DEPTH TO ROCK,TOO CLAYEY
PICNIC AREAS	0-15%: SEVERE-TOO CLAYEY 15+%: SEVERE-SLOPE,TOO CLAYEY	PATHS AND TRAILS	0-25%: SEVERE-TOO CLAYEY 25+%: SEVERE-SLOPE,TOO CLAYEY

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3% 3-60%	7S 7E																

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	POOR	-	-	POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
BUD SAGEBRUSH 1/	ARSP5	10
GARDNER SALTBUSH 1/	ATNU2	50
INDIAN RICEGRASS	ORHY	10
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	5
OTHER PERENNIAL FORBS	PPFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		550
NORMAL YEARS		350
UNFAVORABLE YEARS		200

FOOTNOTES

1 NOT USUALLY UTILIZED BY CATTLE.

WY0157

SOIL INTERPRETATIONS RECORD

MLRA(S): 34, 49
REV. JFY,HRR, 5-80

BROWNSTO SERIES

COROLLIC CALCICRTHIDS, LOAMY-SKELETAL, MIXED

THE BROWNSTO SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND TERRACES. ELEVATION IS 6,400 TO 7,800 FEET. PPT IS 10 TO 14 INCHES, MAST IS 44 TO 46 F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE SURFACE LAYER IS GRAYISH-BROWN GRAVELLY SANDY LOAM ABOUT 6 INCHES THICK. THE UNDERLYING LAYER IS BROWN VERY GRAVELLY SANDY LOAM ABOUT 4 INCHES THICK. THE NEXT LAYER IS VERY PALE BROWN VERY SANDY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 75 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	GR-SL	SM, GM	A-2	0-15	60-70	50-60	40-50	25-35	-	NP
0-6	GRV-SL, CNV-L, GRV-L	GM	A-1	0-15	45-60	35-50	25-35	10-20	-	NP
0-6	GR-SCL	GM	A-4	0-15	60-70	50-60	45-55	35-45	30-40	5-10
6-10	GRV-SL	GM	A-1	0-15	45-60	35-50	25-35	10-20	-	NP
10-60	CBV-SL, CBV-SCL	GM	A-2, A-4	30-35	60-70	50-60	40-50	30-40	25-34	NP-5
60-70	GRV-SL, GRV-SCL	GM	A-1, A-2	0-15	45-60	35-50	25-40	20-30	25-35	NP-5

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	5-15	-	2.0-6.0	0.05-0.07	7.4-8.4	<2	LOW	.20	5	3	1-2	HIGH	LOW
0-6	5-15	-	2.0-6.0	0.04-0.06	7.4-8.4	<2	LOW	.17	5	3	1-2		
0-6	20-25	-	0.6-2.0	0.06-0.09	7.4-8.4	<2	LOW	.24	5	5	1-2		
6-10	5-15	-	2.0-6.0	0.04-0.06	7.4-8.4	<2	LOW	.17					
10-60	15-25		0.6-6.0	0.06-0.09	7.9-9.0	<2	LOW	.17					
60-70	15-25		0.6-6.0	0.06-0.09	7.9-9.0	<2	LOW	.17					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY,LARGE STONES 8-15%: MODERATE-PERCS SLOWLY,SLOPE, LARGE STONES 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-SMALL STONES 15+%: POOR-SMALL STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-LARGE STONES,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-LARGE STONES 4-8%: MODERATE-SLOPE,LARGE STONES 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SMALL STONES,SLOPE 15+% GR: SEVERE-SLOPE 0-15% GRV,CNV: SEVERE-SMALL STONES 15+% GRV,CNV: SEVERE-SMALL STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-15%: FAIR-LARGE STONES 15-25%: FAIR-LARGE STONES,SLOPE 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-SMALL STONES,AREA RECLAIM 15+%: POOR-SMALL STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-SEEPAGE 8+%: SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	MODERATE-PIPING,LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	GR-SCL: LARGE STONES,DROUGHTY GR-SL,GRV-SL,CNV-L: LARGE STONES,DROUGHTY, SOIL BLOWING
TERRACES AND DIVERSIONS	0-8%: LARGE STONES 8+%: SLOPE,LARGE STONES
GRASSED WATERWAYS	0-8%: LARGE STONES,DROUGHTY 8+%: LARGE STONES,SLOPE,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+% GR: SEVERE-SLOPE 0-15% GRV,CNV: SEVERE-SMALL STONES 15+% GRV,CNV: SEVERE-SLOPE,SMALL STONES	PLAYGROUNDS	0-6%: SEVERE-SMALL STONES 6+%: SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+% GR: SEVERE-SLOPE 0-15% GRV,CNV: SEVERE-SMALL STONES 15+% GRV,CNV: SEVERE-SLOPE,SMALL STONES	PATHS AND TRAILS	0-15% GR-SL,GRV-SL,GR-SCL: SLIGHT 15-25% GR-SL,GRV-SL,GR-SCL: MODERATE-SLOPE 0-15% CNV-L: MODERATE-DUSTY 15-25% CNV-L: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	6S	4S														
6-10%	6E	4E														
10-15%	6E	6E														
15+%	6E	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-6% NIRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR
6+% NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
0-6% IRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	-
6-15% IRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ANTELOPE BITTERBRUSH	PUTR2	5
BIG SAGEBRUSH	ARTR2	5
BLACK SAGEBRUSH	ARARN	10
BLUEBUNCH WHEATGRASS	AGSP	30
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
LETTERMAN NEEDLEGRASS	STLE4	5
NEEDLEANDTHREAD	STCO4	15
SANDBERG BLUEGRASS	POSE	5
THICKSPIKE WHEATGRASS	AGDA	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1,400
NORMAL YEARS		1,000
UNFAVORABLE YEARS		600

FOOTNOTES

MLRA(S): 48
J8, 3-73
ARGIC CRYOBOROLLS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED

CABIN SERIES

THE CABIN SERIES CONSISTS OF DEEP WELL DRAINED SOILS FORMED IN OUTWASH ON FANS, TERRACES AND BENCHES. TYPICALLY THE SURFACE LAYER IS LOAMY SAND ABOUT 4 INCHES THICK. THE SUBSURFACE LAYER IS SANDY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL LAYER IS GRAVELLY SANDY CLAY LOAM ABOUT 22 INCHES THICK AND OVERLIES GRAVELLY LOAMY SAND THAT EXTENDS TO 60 INCHES OR MORE. NATURAL VEGETATION IS MOSTLY GRASS AND BRUSH. AVERAGE ANNUAL PRECIPITATION IS ABOUT 17 INCHES. SLOPES ARE 0 TO 15 PERCENT. FROST FREE SEASON IS LESS THAN 50 DAYS.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	LS, SL	SM	A-2, A-1	0-5	75-95	75-95	30-50	15-35	-	NP
4-8	SL	SM	A-2, A-4	0-5	75-95	75-95	35-50	25-40	-	NP
8-30	GR-SCL, GR-SL	SC, GC	A-2, A-6	5-10	55-75	50-75	40-50	25-45	20-35	10-15
30-60	GRV-LS, STV-LS	GP-GM, GM	A-1	10-50	30-50	30-50	15-25	5-15	-	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-4	6.0-20	0.06-0.09	6.1-7.8	<2	LOW	LOW	LOW	.17	4	-
4-8	2.0-6.0	0.09-0.12	6.1-7.8	<2	LOW	LOW	LOW	.17		
8-30	0.6-2.0	0.10-0.14	6.1-7.8	<2	LOW	LOW	LOW	.10		
30-60	6.0-20	0.04-0.06	6.1-7.8	<2	LOW	LOW	LOW	.10		

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES (A)

SEPTIC TANK ABSORPTION FIELDS	0-8%: SLIGHT 8+%: MODERATE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SLOPE,SEEPAGE
SANITARY LANDFILL (TRENCH)	SEVERE-SEEPAGE
SANITARY LANDFILL (AREA)	SEVERE-SEEPAGE
DAILY COVER FOR LANDFILL	0-8%: MODERATE-LARGE STONES 8+%: MODERATE-LARGE STONES,SLOPE

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-SMALL STONES,CUTBANKS CAVE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8+%: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8+%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8% +: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8+%: MODERATE-SLOPE

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	GOOD
SAND	POOR
GRAVEL	POOR
TOPSOIL	0-8%: FAIR-SMALL STONES 8+%: FAIR-SLOPE,SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	FAVORABLE
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	FAVORABLE
IRRIGATION	SLOPE,SEEPAGE
TERRACES AND DIVERSIONS	ERODES EASILY,PIPING
GRASSED WATERWAYS	SLOPE,ERODES EASILY

CABIN SERIES

CO0111

RECREATION

CAMP AREAS	0-8%: SLIGHT 8+%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8+%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)													
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-5%	6E	6E		2.5												
5+%	6E	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	GOOD	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
SHEEP FESCUE	FEOE	10
PINE NEEDLEGRASS	STPI2	10
MUTTONGRASS	POFE	10
BLUEBUNCH WHEATGRASS	AGSP	3
STREAMBANK WHEATGRASS	AGRI	10
SQUIRRELTAIL	SIHY	2
JUNEGRASS	KOCR	5
BIG SAGEBRUSH 1/	ARTR2	30
LOW RABBITBRUSH 1/	CHVIP2	10
LOW PHLOX 1/	PHHO	2
BUCKWHEAT 1/	ERIOG	3
UNKNOWNS	UUUU	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1000
NORMAL YEARS		750
UNFAVORABLE YEARS		500

FOOTNOTES

1 NOT USUALLY UTILIZED BY CATTLE OR SHEEP
A MAYBE POLLUTION HAZARD
2 RECOVERY OF SAND AFTER SIEVING IS ADEQUATE

WY9042 SOIL INTERPRETATIONS RECORD

ILRA(S): 34, 58B
AMP, JFY, 2-82
JSTOLLIC CAMBORTHIDS, FINE-LOAMY, MIXED, MESIC

CADOMA VARIA

CADOMA VARIANTS ARE MODERATELY DEEP, WELL DRAINED SOILS FORMED IN MEDIUM TEXTURED MATERIALS WEATHERED FROM SANDY SHALE. THEY ARE ON SHALE UPLANDS. PPT IS 10 TO 14 INCHES. MAST IS 49 TO 55 F. FFS IS 110 TO 130 DAYS. ELEVATION IS 4500 TO 63(FEET. TYPICALLY, THE SURFACE LAYER IS PALE BROWN VERY FINE SANDY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS LIGHT BROWNISH GRAY CLAY LOAM ABOUT 17 INCHES THICK. THE SUBSTRATUM IS GRAYISH BROWN CLAY LOAM ABOUT 5 INCHES THICK. SLOPES RANGE FROM 2 TO 12 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	VFSL	SM	A-2, A-4	0	95-100	95-100	85-100	30-50	25-30	NP-5
4-26	L, CL, SCL	SC, CL	A-6	0	90-100	75-100	65-85	40-60	30-35	10-15
26	WB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-4	15-20		0.6-2.0	0.14-0.17	7.9-8.4	2-4	LOW	.32	2	3	1-2	HIGH	HIGH
4-26	25-30		0.2-0.6	0.04-0.06	>8.4	>8	MODERATE	.37					
26													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT FROST ACTION
NONE			>6.0			-		20-40	SOFT	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK, PERCS SLOWLY
SEWAGE LAGOON AREAS	2-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK, SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK, EXCESS SALT
SANITARY LANDFILL (AREA)	SEVERE-DEPTH TO ROCK
DAILY COVER FOR LANDFILL	POOR-AREA RECLAIM, EXCESS SALT

CONSTRUCTION MATERIAL

ROADFILL	POOR-AREA RECLAIM
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	2-3%: MODERATE-DEPTH TO ROCK 3-8%: MODERATE-DEPTH TO ROCK, SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-EXCESS SALT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	DROUGHTY, SOIL BLOWING, DEPTH TO ROCK
TERRACES AND DIVERSIONS	2-8%: DEPTH TO ROCK, ERODES EASILY 8+%: SLOPE, DEPTH TO ROCK, ERODES EASILY
GRASSED WATERWAYS	2-8%: ERODES EASILY, DROUGHTY 8+%: SLOPE, ERODES EASILY, DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	2-8%: MODERATE-DEPTH TO ROCK 8-12%: MODERATE-DEPTH TO ROCK, SLOPE
DWELLINGS WITHOUT BASEMENTS	2-8%: MODERATE-SHRINK-SWELL 8-12%: MODERATE-SHRINK-SWELL, SLOPE
DWELLINGS WITH BASEMENTS	2-8%: MODERATE-DEPTH TO ROCK, SHRINK-SWELL 8-12%: MODERATE-DEPTH TO ROCK, SLOPE, SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	2-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL, SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	2-8%: MODERATE-SHRINK-SWELL 8-12%: MODERATE-SLOPE, SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	2-8%: MODERATE-DROUGHTY, THIN LAYER 8-12%: MODERATE-DROUGHTY, SLOPE, THIN LAYER

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	2-8%: MODERATE-PERCS SLOWLY 8-12%: MODERATE-SLOPE,PERCS SLOWLY	PLAYGROUNDS	2-6%: MODERATE-SLOPE,DEPTH TO ROCK, PERCS SLOWLY 6+%: SEVERE-SLOPE
PICNIC AREAS	2-8%: MODERATE-PERCS SLOWLY 8-12%: MODERATE-SLOPE,PERCS SLOWLY	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
2-6%	6S	6S														
6-15%	6E	6E														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	FAIR	POOR	-	-	POOR	V. POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (1)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
WESTERN WHEATGRASS	AGSM	25
NEEDLEANDTHREAD	STCO4	20
BLUE GRAMA	BOGR2	10
GREEN NEEDLEGRASS	STVI4	10
CUSICK BLUEGRASS	POCU3	10
BIG SAGEBRUSH	ARTR2	5

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	2000
NORMAL YEARS	1500
UNFAVORABLE YEARS	850

FOOTNOTES

1 THE DOMINANT SHRUB IN THE PRESENT PLANT COMMUNITY IS BIRDFOOT SAGEBRUSH.

MLRA(S): 46, 44, 52, 58, 59 CASTNER SERIES
COC-RER, 11-74
LITHIC HAPLOBOROLLS, LOAMY-SKELETAL, MIXED

THE CASTNER SERIES CONSISTS OF SHALLOW, WELL-DRAINED SOILS FORMED IN MATERIAL WEATHERED FROM SANDSTONE AND IGNEOUS BEDROCK. TYPICALLY THESE SOILS HAVE A CHANNERY SANDY LOAM SURFACE LAYER, VERY CHANNERY LOAM SUBSURFACE LAYER AND VERY CHANNERY LOAM UNDERLYING MATERIAL OVER SANDSTONE AT DEPTHS OF 6 TO 20 INCHES. THEY OCCUPY UPLANDS IN 14 TO 18 INCH PRECIPITATION ZONE. VEGETATION IS MAINLY MID AND SHORT GRASSES. THE GROWING SEASON IS 105 TO 135 DAYS. SLOPES ARE 0 TO 45 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	CN-L, CB-L, FL-L	SM, SM-SC, ML, CL-ML	A-4	25-45	75-85	60-75	50-60	35-55	25-35	5-10
0-6	LFS, SL	SM	A-2	0-5	90-100	85-100	55-80	25-35	15-25	NP-5
0-6	L	ML, CL-ML	A-4	0-5	95-100	95-100	80-90	60-75	25-35	5-10
6-16	CNV-L, CN-L, CB-L	GM	A-2, A-4, A-1	20-50	30-65	25-60	20-50	15-40	25-35	NP-10
16	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-6	0.6-2.0	0.08-0.12	6.6-7.8	-	LOW	HIGH	LOW	.28	1	8
0-6	0.6-2.0	0.08-0.11	6.6-7.8	-	LOW	HIGH	LOW	.20	1	3
0-6	0.6-2.0	0.16-0.20	6.6-7.8	-	LOW	HIGH	LOW	.32	1	5
6-16	0.6-2.0	0.04-0.09	6.6-8.4	<2	LOW	HIGH	LOW	.24		
16										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		6-20	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	0-25%: SEVERE-DEPTH TO ROCK 25+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-THIN LAYER,SMALL STONES, AREA RECLAIM 15+%: POOR-SLOPE,THIN LAYER,SMALL STONES

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	0-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	UNSUITED
GRAVEL	UNSUITED-THIN LAYER
TOPSOIL	0-15% CB-L,CN-L: POOR-SMALL STONES, THIN LAYER 15+% CB-L,CN-L: POOR-SLOPE,SMALL STONES, THIN LAYER 0-15% SL,L,LFS: POOR-TOO SANDY,THIN LAYER ?

WATER MANAGEMENT

POND RESERVOIR AREA	0-4%: DEPTH TO ROCK 4+%: SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	PIPING,THIN LAYER
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	0-2%: DEPTH TO ROCK,FROST ACTION 2+%: SLOPE,DEPTH TO ROCK,FROST ACTION
IRRIGATION	0-2%: ROOTING DEPTH,DROUGHTY 2+%: ROOTING DEPTH,DROUGHTY,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,PIPING,ROOTING DEPTH 8+%: SLOPE,DEPTH TO ROCK,ROOTING DEPTH
GRASSED WATERWAYS	0-4%: ROOTING DEPTH 4+%: ROOTING DEPTH,SLOPE

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	0-8% CB,CN,FL: MODERATE-SMALL STONES 8-15% CB,CN,FL: MODERATE-SMALL STONES,SLOPE 0-8% SL,L,LFS: SLIGHT 8-15% SL,L,LFS: MODERATE-SLOPE 15%: SEVERE-SLOPE	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-DEPTH TO ROCK,SLOPE
PICNIC AREAS	0-8% CB,CN,FL: MODERATE-SMALL STONES 8-15% CB,CN,FL: MODERATE-SMALL STONES,SLOPE 0-8% SL,L,LFS: SLIGHT 8-15% SL,L,LFS: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% CB,CN,FL: MODERATE-SMALL STONES 15-25% CB,CN,FL: MODERATE-SMALL STONES,SLOPE 0-15% SL,L,LFS: SLIGHT 15-25% SL,L,LFS: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-25%	6E															
25+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (A)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	40
ROUGH FESCUE	FESC	25
GREEN NEEDLEGRASS	STVI4	5
PRAIRIE SANDREED	CALO	5
NEEDLEANDTHREAD	STCO4	5
WESTERN WHEATGRASS	AGSM	5
IDAHO FESCUE	FEID	5
OTHER ANNUAL FORBS	AAFF	5
OTHER SHRUBS	SSSS	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1200
NORMAL YEARS		
UNFAVORABLE YEARS		800

FOOTNOTES

C00355

SOIL INTERPRETATIONS RECORD

MLRA(S): 48
REV. BM,AP, 6-81
LITHIC HAPLOBOROLLS, LOAMY-SKELETAL, MIXED

CATHEDRAL SERIES

THE CATHEDRAL SERIES CONSIST OF WELL-DRAINED SOILS FORMED IN WEATHERED GRANITE ON MOUNTAIN SLOPES AND RIDGES. THE SURFACE LAYER IS DARK COLORED VERY GRAVELLY COARSE SANDY LOAM, ABOUT 7 INCHES THICK. THE UNDERLYING LAYER IS VERY GRAVELLY COARSE SANDY LOAM, ABOUT 7 INCHES THICK, AND OVERLIES GRANITE BEDROCK AT 14 INCHES. NATURAL VEGETATION IS MOSTLY WINTERFAT, SEDGES, FRINGE SAGE, AND GRASS. AVERAGE ANNUAL PRECIPITATION IS ABOUT 12 INCHES. FROST-FREE SEASON IS ABOUT 85 DAYS. SLOPES ARE 2 TO 100 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	GRV-COSL, GRV-SL	SM	A-1	0-5	80-95	35-50	25-35	10-20	15-20	NP-5
0-7	STV-SL	GP-GM, SP-SM, GM, SM	A-1, A-2, A-4	25-55	40-95	35-90	20-70	5-40	20-25	NP-5
0-7	GR-SL	SM	A-1	0-5	80-95	50-65	25-35	15-25	15-20	NP-5
7-14	GRV-COSL,GRV-SL,GRX ?	GP-GM, SP-SM, SM, GM	A-1	0-10	20-75	15-50	15-35	5-20	15-20	NP-5
14	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-7	5-18		6.0-20	0.05-0.07	5.6-7.8	-	LOW	.10	1	8	2-4	MODERATE	MODERATE
0-7	5-18		6.0-20	0.05-0.09	5.6-7.8	-	LOW	.10	1	8	2-4		
0-7	5-18		6.0-20	0.08-0.09	5.6-7.8	-	LOW	.20	1	6	2-4		
7-14	5-18		6.0-20	0.05-0.07	5.6-7.8	-	LOW	.10					
14													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	HARD	-	-	D	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK
SEWAGE LAGOON AREAS	SEVERE-SEEPAGE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK,SEEPAGE
SANITARY LANDFILL (AREA)	SEVERE-DEPTH TO ROCK,SEEPAGE
DAILY COVER FOR LANDFILL	POOR-AREA RECLAIM,SEEPAGE,SMALL STONES

CONSTRUCTION MATERIAL

ROADFILL	POOR-AREA RECLAIM
SAND	IMPROBABLE-THIN LAYER
GRAVEL	IMPROBABLE-THIN LAYER
TOPSOIL	POOR-AREA RECLAIM,SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	SEVERE-DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	SEVERE-SEEPAGE
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	GRV,GR: DROUGHTY,DEPTH TO ROCK STV: LARGE STONES,DROUGHTY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	GRV,GR: DEPTH TO ROCK STV: LARGE STONES,DEPTH TO ROCK
GRASSED WATERWAYS	GRV,GR: DROUGHTY,DEPTH TO ROCK STV: LARGE STONES,DROUGHTY,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	SEVERE-DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	SEVERE-DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	SEVERE-DEPTH TO ROCK
LOCAL ROADS AND STREETS	SEVERE-DEPTH TO ROCK
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	GR: SEVERE-THIN LAYER GRV,STV: SEVERE-SMALL STONES,THIN LAYER

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	GR: SEVERE-DEPTH TO ROCK GRV,STV: SEVERE-SMALL STONES,DEPTH TO ROCK	PLAYGROUNDS	GRV,GR: SEVERE-SMALL STONES,DEPTH TO ROCK STV: SEVERE-LARGE STONES,SMALL STONES, DEPTH TO ROCK
PICNIC AREAS	GR: SEVERE-DEPTH TO ROCK GRV,STV: SEVERE-SMALL STONES,DEPTH TO ROCK	PATHS AND TRAILS	GRV,GR: SLIGHT STV: SEVERE-LARGE STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	POOR	-	-	POOR	V. POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
MUTTONGRASS	POFE	20
WESTERN WHEATGRASS	AGSM	10
PINE NEEDLEGRASS	STPI2	10
NEEDLEANDTHREAD	STCO4	5
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
BASIN BIG SAGEBRUSH	ARTR2	10
FRINGED SAGEBRUSH	ARFR4	5
ANTELOPE BITTERBRUSH	PUTR2	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1000
NORMAL YEARS		900
UNFAVORABLE YEARS		700

FOOTNOTES

SOIL INTERPRETATIONS RECORD

MLRA(S): 33, 46
REV. JFY,JEI. 1-80
ARGIC LITHIC CRYOBOROLLS, LOAMY, MIXED

CHITTUM SERIE

CHITTUM SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SANDSTONE ON UPLANDS AND ANTICLINE BACKSLOPES. ELEVATION IS 7500 TO 9500 FEET. PPT IS ABOUT 19 INCHES. MAST IS 42 TO 45F. FFS IS LESS THAN 90 DAYS. TYPICALLY, THE SURFACE HORIZON IS DARK BROWN GRAVELLY LOAM ABOUT 5 INCHES THICK. THE SUBSOIL IS ABOUT 12 INCHES THICK; THE UPPER 6 INCHES IS REDDISH BROWN GRAVELLY LOAM AND THE LOWER 6 INCHES IS YELLOWISH RED GRAVELLY CLAY LOAM AND IS UNDERLAIN BY SANDSTONE AT 17. SLOPES ARE 0 TO 45 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-5	GR-L	SM, ML, GM	A-4	0-5	70-95	55-80	50-70	35-55	25-30	NP-5
5-11	GR-L	SM-SC, CL-ML	A-4	0-5	70-95	55-80	55-70	35-55	15-25	5-10
11-17	GR-CL	SC, CL	A-6	0-5	70-95	55-80	55-75	40-60	30-40	10-15
17	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-5	15-25		0.6-2.0	0.12-0.14	6.1-6.5	<2	LOW	.24	1	5	2-3	HIGH	LOW
5-11	18-25		0.6-2.0	0.12-0.14	6.1-6.5	<2	LOW	.24					
11-17	18-35		0.6-2.0	0.14-0.16	5.6-6.5	<2	MODERATE	.28					
17													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0					10-20	HARD			D	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DEPTH TO ROCK 3+%: DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-SMALL STONES,DEPTH TO ROCK 6+%: SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	-	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	5
BLACK SAGEBRUSH	ARARN	5
BLUEBUNCH WHEATGRASS	AGSP	5
COLUMBIA NEEDLEGRASS	STCO3	10
IDAHO FESCUE	FEID	15
MOUNTAIN BROME	BRCA5	5
PRAIRIE JUNEGRASS	KOCR	10
SANDBERG BLUEGRASS	POSE	5
SLENDER WHEATGRASS	AGTR	5
SPIKE-FESCUE	HEKI	10
WESTERN WHEATGRASS	AGSM	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1000
NORMAL YEARS		850
UNFAVORABLE YEARS		500

FOOTNOTES

UT0664

SOIL INTERPRETATIONS RECORD

MLRA(S): 43
REV. JFY,MEU, 10-78
ARGIC PACHIC CRYOBOROLLS, FINE-LOAMY, MIXED

CLAYBURN SERIES

THE CLAYBURN SERIES ARE VERY DEEP SOILS FORMED IN GLACIAL DRIFT FROM ANDECITE ON PLATEAUS UNDER WHEATGRASS, BROME, FESCUE AND BIG SAGEBRUSH. MAST IS 40 TO 42 F. AAP IS 20 TO 35 INCHES. FFP IS 50 TO 80 DAYS. A TYPICAL PROFILE HAS A VERY DARK BROWN LOAM SURFACE LAYER 18 INCHES THICK. THE SUBSOIL IS DARK BROWN SANDY CLAY LOAM 23 INCHES THICK. THE SUBSTRATUM IS GRAVELLY SANDY LOAM TO 60 INCHES OR MORE. SLOPES ARE 3 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-18	SL	SM	A-2, A-4	0-5	90-100	80-95	50-65	30-40	15-25	NP-5
0-18	L	CL-ML	A-4	0-5	90-100	80-95	70-90	50-65	20-30	5-10
0-18	CB-L	CL-ML	A-4	20-40	90-100	80-95	70-90	50-65	20-30	5-10
18-41	SCL, CL, L	CL-ML, CL	A-4, A-6	10-20	90-100	85-100	75-90	55-70	25-35	5-15
41-60	GR-SL, GRV-L	SM, GM	A-2	15-25	60-75	50-70	35-50	25-35	15-25	NP-5
60-70	SL	SM	A-2, A-4	0-5	90-100	80-95	50-65	30-40	15-25	NP-5

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-18	5-15	-	0.6-2.0	0.09-0.11	6.1-7.3	<2	LOW	.20	4	3	1-3	HIGH	MODERATE
0-18	15-25	-	0.6-2.0	0.14-0.16	6.1-7.3	<2	LOW	.20	4	6	1-3		
0-18	15-25	-	0.6-2.0	0.12-0.14	6.1-7.3	<2	LOW	.17	4	8	1-3		
18-41	25-35	-	0.6-2.0	0.15-0.17	6.1-7.3	<2	MODERATE	.28					
41-60	12-18	-	2.0-6.0	0.07-0.09	6.1-6.5	<2	LOW	.20					
60-70	5-15	-	2.0-6.0	0.09-0.11	7.4-7.8	<2	LOW	.24					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	3-8%: MODERATE-PERCS SLOWLY 8-15%: MODERATE-PERCS SLOWLY,SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	3-7% L,SL: SEVERE-SEEPAGE 7+% L,SL: SEVERE-SEEPAGE,SLOPE 3-7% CB: SEVERE-SEEPAGE,LARGE STONES 7+% CB: SEVERE-SEEPAGE,SLOPE,LARGE STONES
SANITARY LANDFILL (TRENCH)	3-15%: SEVERE-SEEPAGE 15+%: SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (AREA)	3-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	3-8%: FAIR-TOO CLAYEY,LARGE STONES 8-15%: FAIR-TOO CLAYEY,LARGE STONES,SLOPE 15+%: POOR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	3-15% L,SL: GOOD 15-25% L,SL: FAIR-SLOPE 3-15% CB: FAIR-LARGE STONES 15-25% CB: FAIR-LARGE STONES,SLOPE 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	3-15%: POOR-LARGE STONES,AREA RECLAIM 15+%: POOR-LARGE STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	L,SL: SLOPE CB: SLOPE,LARGE STONES
TERRACES AND DIVERSIONS	3-8% L,CB-L: LARGE STONES 8+% L,CB-L: SLOPE,LARGE STONES 3-8% SL: LARGE STONES,SOIL BLOWING 8+% SL: SLOPE,LARGE STONES,SOIL BLOWING
GRASSED WATERWAYS	3-8% L,SL: FAVORABLE 8+% L,SL: SLOPE 3-8% CB: LARGE STONES 8+% CB: LARGE STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	3-8% L,SL: SLIGHT 8-15% L,SL: MODERATE-SLOPE 3-8% CB: MODERATE-LARGE STONES 8-15% CB: MODERATE-LARGE STONES,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	3-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	3-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	3-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	3-8%: MODERATE-FROST ACTION,SHRINK-SWELL 8-15%: MODERATE-SLOPE,FROST ACTION, SHRINK-SWELL 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	3-8% L,SL: SLIGHT 8-15% L,SL: MODERATE-SLOPE 15+% L,SL: SEVERE-SLOPE 3-15% CB: SEVERE-LARGE STONES 15+% CB: SEVERE-LARGE STONES,SLOPE

REGIONAL INTERPRETATIONS

CLAYBURN SERIES

UT0664

RECREATIONAL DEVELOPMENT

CAMP AREAS	3-8% L.SL: SLIGHT 8-15% L.SL: MODERATE-SLOPE 3-8% CB: MODERATE-LARGE STONES 8-15% CB: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE	PLAYGROUNDS	3-6% L.SL: MODERATE-SLOPE,SMALL STONES 6+% L.SL: SEVERE-SLOPE 3-6% CB: SEVERE-LARGE STONES 6+% CB: SEVERE-LARGE STONES,SLOPE
PICNIC AREAS	3-8% L.SL: SLIGHT 8-15% L.SL: MODERATE-SLOPE 3-8% CB: MODERATE-LARGE STONES 8-15% CB: MODERATE-SLOPE,LARGE STONES 15+%: SEVERE-SLOPE	PATHS AND TRAILS	3-15% L.SL: SLIGHT 15-25% L.SL: MODERATE-SLOPE 3-15% CB: MODERATE-LARGE STONES 15-25% CB: MODERATE-LARGE STONES,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IKR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E																

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	GOOD	-	GOOD	GOOD	V. POOR	V. POOR	POOR	GOOD	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
CANBY BLUEGRASS	POCA	10
COLUMBIA NEEDLEGRASS	STCO3	5
IDAHO FESCUE	FEID	20
MOUNTAIN BROME	BRCA5	5
SPIKE-FESCUE	HEKI	10
THICKSPIKE WHEATGRASS	AGDA	15
OTHER PERENNIAL GRASSES	PPGG	10
OTHER PERENNIAL FORBS	PPFF	5
ANTELOPE BITTERBRUSH	PUTR2	10
BIG SAGEBRUSH	ARTR2	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		2400
NORMAL YEARS		2000
UNFAVORABLE YEARS		1400

FOOTNOTES

WY0377 SOIL INTERPRETATIONS RECORD

MLRA(S): 34
REV. JFY,JRS, 2-77
USTIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), FRIGID, SHALLOW

CRAGOSEN SERIES

THE CRAGOSEN SERIES ARE WELL DRAINED SOILS FORMED IN OUTWASH MATERIAL ON UPLANDS. ELEVATION IS 7,000 TO 7,800 FEET. PPT IS 10 TO 14 INCHES, MAST IS ABOUT 44 F., AND THE FFS IS 60 TO 100 DAYS. TYPICALLY, THE PROFILE IS PALE BROWN TO BROWN GRAVELLY LOAM UNDERLAIN BY BEDROCK AT A DEPTH OF 14 INCHES. SLOPES ARE 6 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-14	GR-L	GM-GC	A-2, A-4	15-25	35-60	35-60	30-55	25-40	15-25	5-10
14	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-14			0.6-2.0	0.06-0.12	7.4-9.0	<2	LOW	.28	1	4L		HIGH	LOW
14			-	-	-	-		-					

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	6-7%: SEVERE-DEPTH TO ROCK,SMALL STONES 7+%: SEVERE-SLOPE,DEPTH TO ROCK,SMALL STONES
SANITARY LANDFILL (TRENCH)	6-25%: SEVERE-DEPTH TO ROCK 25+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	6-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	6-15%: POOR-THIN LAYER,SMALL STONES, AREA RECLAIM 15+%: POOR-SLOPE,THIN LAYER,SMALL STONES

CONSTRUCTION MATERIAL

ROADFILL	6-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	UNSUITED-EXCESS FINES,THIN LAYER
GRAVEL	UNSUITED-EXCESS FINES,THIN LAYER
TOPSOIL	6-15%: POOR-SMALL STONES,AREA RECLAIM, THIN LAYER 15+%: POOR-SLOPE,SMALL STONES,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	SLOPE,DROUGHTY,ROOTING DEPTH

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	6-8%: MODERATE-DEPTH TO ROCK,SMALL STONES 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, SMALL STONES 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	6-8%: MODERATE-DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	6-15%: SEVERE-SMALL STONES 15+%: SEVERE-SLOPE,SMALL STONES	PLAYGROUNDS	SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK
PICNIC AREAS	6-15%: SEVERE-SMALL STONES 15+%: SEVERE-SLOPE,SMALL STONES	PATHS AND TRAILS	6-25%: SEVERE-SMALL STONES 25+%: SEVERE-SLOPE,SMALL STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
-	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
6-8%	V. POOR	V. POOR	FAIR	-	-	FAIR	POOR	V. POOR	V. POOR	-	V. POOR	FAIR
8+%	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	V. POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (BLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ANTELOPE BITTERBRUSH	PUTR2	5
BIG SAGEBRUSH	ARTR2	5
BLUEBUNCH WHEATGRASS	AGSP	20
INDIAN RICEGRASS	ORHY	10
LETTERMAN NEEDLEGRASS	STLE4	5
LOW RABBITBRUSH	CHVIH2	5
NEEDLEANDTHREAD	STCO4	10
NEEDLELEAF SEDGE 1/	CAEL2	5
SANDBERG BLUEGRASS	POSE	5
THICKSPIKE WHEATGRASS	AGDA	15
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1,200
NORMAL YEARS		900
UNFAVORABLE YEARS		700

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

WY0244

SOIL SURVEY INTERPRETATIONS

MLRA(S): 32, 34
REV. JFY, 4-76
LITHIC USTIC TORRIORTHENTS, LOAMY, MIXED, NONACID, FRIGID

CROWNEST SERIES

THE CROWNEST SERIES ARE WELL-DRAINED SOILS FORMING IN RESIDIUM FROM HARD SANDSTONE ON GENTLY TO STEEPLY SLOPING UPLANDS. SLOPES ARE 2 TO 45 PERCENT. ELEVATION IS 4500 TO 6000 FEET. PPT IS 12 TO 15 INCHES. MAST IS 42 TO 47 F. TYPICALLY, THE SURFACE LAYER IS BROWN LOAMY SAND, ABOUT 3 INCHES THICK. THE SUBSTRATUM IS BROWN SANDY LOAM, ABOUT 9 INCHES THICK, UNDERLAIN BY SANDSTONE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	LS, SL	SM	A-2	0-5	80-100	80-100	50-60	15-35	-	NP
3-12	SL	SM	A-2	0-5	80-100	80-100	50-65	25-35	-	NP
12	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-3	2.0-6.0	0.06-0.13	7.4-7.8	-	LOW	MODERATE	LOW	.28	1	2
3-12	2.0-6.0	0.11-0.13	7.4-7.8	<2	LOW	HIGH	LOW	.28		
12										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	HARD	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	2-7%: SEVERE-DEPTH TO ROCK,SEEPAGE 7+%: SEVERE-SLOPE,DEPTH TO ROCK,SEEPAGE
SANITARY LANDFILL (TRENCH)	2-25%: SEVERE-DEPTH TO ROCK,SEEPAGE 25+%: SEVERE-SLOPE,DEPTH TO ROCK,SEEPAGE
SANITARY LANDFILL (AREA)	2-15%: SEVERE-SEEPAGE 15+%: SEVERE-SLOPE,SEEPAGE
DAILY COVER FOR LANDFILL	2-15%: POOR-THIN LAYER,AREA RECLAIM 15+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	2-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	2-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	POOR-EXCESS FINES
GRAVEL	UNSUITED
TOPSOIL	0-15%: POOR-AREA RECLAIM 15+%: POOR-SLOPE,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,SEEPAGE,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	2-10%: DEPTH TO ROCK,PIPING 10+%: SLOPE,DEPTH TO ROCK,PIPING
GRASSED WATERWAYS	2-10%: ROOTING DEPTH 10+%: SLOPE,ROOTING DEPTH

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	2-8% LS: MODERATE-TOO SANDY 8-15% LS: MODERATE-SLOPE,TOO SANDY 2-8% SL: SLIGHT 8-15% SL: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	2-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	2-8% LS: MODERATE-TOO SANDY 8-15% LS: MODERATE-SLOPE,TOO SANDY 2-8% SL: SLIGHT 8-15% SL: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	2-15% LS: MODERATE-TOO SANDY 15-25% LS: MODERATE-SLOPE,TOO SANDY 2-15% SL: SLIGHT 15-25% SL: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	5
BLUEBUNCH WHEATGRASS	AGSP	30
INDIAN RICEGRASS	ORHY	15
LOW RABBITBRUSH	CHVIP2	5
NEEDLEANDTHREAD	STCO4	15
PRAIRIE JUNEGRASS	KOCR	10
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER SHRUBS	SSSS	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		700
NORMAL YEARS		500
UNFAVORABLE YEARS		350

FOOTNOTES

MT0154 SOIL SURVEY INTERPRETATIONS

MLRA(S): 67, 49
REV. AEA, 8-75
USTOLLIC HAPLARGIDS, FINE-LOAMY, MIXED, MESIC

CUSHMAN SERIES

THE CUSHMAN SERIES CONSIST OF MODERATELY DEEP WELL DRAINED SOILS FORMED IN RESIDUUM FROM SEDIMENTARY ROCKS ON UPLANDS. TYPICALLY THE SURFACE IS LOAM ABOUT 7 INCHES THICK. THE SUBSOIL IS CLAY LOAM ABOUT 5 INCHES THICK AND OVERLIES LOAM THAT IS 12 INCHES THICK AND RESTS ON WEATHERED BEDROCK AT 24 INCHES. NATURAL VEGETATION IS MOSTLY GRASS. ANNUAL PRECIPITATION IS ABOUT 15 INCHES AND THE FROST FREE SEASON IS ABOUT 145 DAYS. SLOPES ARE 1 TO 15 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	L	ML, CL-ML	A-4	0	100	85-100	85-95	60-75	20-30	NP-10
7-12	CL	CL	A-6	0	100	90-100	85-95	70-80	25-35	10-15
12-24	L	CL-ML	A-4	0	100	85-100	85-95	60-75	25-30	5-10
24	WB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-7	0.6-2.0	0.16-0.20	6.6-7.3	-	LOW	HIGH	LOW	.32	2	5
7-12	0.6-2.0	0.14-0.18	6.6-7.3	-	MODERATE	HIGH	LOW	.32		
12-24	0.6-2.0	0.14-0.18	6.6-7.3	<2	LOW	HIGH	LOW	.32		
24										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		20-40	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK
SEWAGE LAGOON AREAS	1-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK, SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	1-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-AREA RECLAIM

SOURCE MATERIAL

ROADFILL	FAIR-AREA RECLAIM, THIN LAYER
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	1-8%: FAIR-TOO CLAYEY 8-15%: FAIR-TOO CLAYEY, SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	DEPTH TO ROCK, SLOPE, SEEPAGE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER, LOW STRENGTH, PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	DEPTH TO ROCK, COMPLEX SLOPE
IRRIGATION	ROOTING DEPTH, COMPLEX SLOPE
TERRACES AND DIVERSIONS	1-9%: DEPTH TO ROCK 9+%: SLOPE, DEPTH TO ROCK
GRASSED WATERWAYS	1-6%: ROOTING DEPTH, ERODES EASILY 6+%: ROOTING DEPTH, SLOPE, ERODES EASILY

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	1-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-DEPTH TO ROCK, SLOPE
DWELLINGS WITHOUT BASEMENTS	1-8%: MODERATE-LOW STRENGTH 8-15%: MODERATE-LOW STRENGTH, SLOPE
DWELLINGS WITH BASEMENTS	1-8%: MODERATE-DEPTH TO ROCK, LOW STRENGTH 8-15%: MODERATE-SLOPE, DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	1-4%: MODERATE-LOW STRENGTH 4-7%: MODERATE-SLOPE, LOW STRENGTH 7-15%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	1-8%: MODERATE-LOW STRENGTH, SHRINK-SWELL 8-15%: MODERATE-SLOPE, LOW STRENGTH, SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	1-8%: MODERATE-DUSTY 8+%: MODERATE-SLOPE,DUSTY	PLAYGROUNDS	1-6%: MODERATE-SLOPE,DUSTY 6+%: SEVERE-SLOPE
PICNIC AREAS	1-8%: MODERATE-DUSTY 8+%: MODERATE-SLOPE,DUSTY	PATHS AND TRAILS	MODERATE-DUSTY

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	WHEAT (BU)		CORN (BU)		CORN SILAGE (TONS)		ALFALFA HAY (TONS)		SUGAR BEETS (TONS)					
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
1-5%	4E	4E	14	35		70		14		3.5		14				
5-9%	6E	4E		35		70		14		3.5		14				
9+%	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
NIRR	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	V. POOR	-	V. POOR	FAIR
IRR	FAIR	FAIR	FAIR				POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
WESTERN WHEATGRASS	AGSM	8
NEEDLEANDTHREAD	STCO4	5
BLUE GRAMA	BOGR2	60
SEDGE	CAREX	5
BUFFALOGRASS	BUDA	5
OTHER PERENNIAL GRASSES	FFGG	8
OTHER PERENNIAL FORBS	PPFF	7
OTHER SHRUBS	SSSS	2
POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS		1700
NORMAL YEARS		1200
UNFAVORABLE YEARS		800

FOOTNOTES

SOIL INTERPRETATIONS RECORD

MLRA(S): 43
REV. JFY,FS. 1-80
ARGIC PACHIC CRYOBOROLLS, FINE-LOAMY, MIXED

DECROSS SERIES

THE DECROSS SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND SIDE SLOPES. ELEVATION IS 5600 TO 9000 FEET. PPT IS ABOUT 20 INCHES. MAST IS ABOUT 42F. THE FFS IS 30 TO 90 DAYS. TYPICALLY, THE SURFACE LAYER IS DARK GRAYISH-BROWN LOAM, ABOUT 9 INCHES THICK. THE SUBSOIL IS ABOUT 28 INCHES THICK; THE UPPER 21 INCHES IS DARK GRAYISH-BROWN CLAY LOAM AND THE LOWER 7 INCHES IS GRAYISH-BROWN LOAM. THE SUBSTRATUM IS LIGHT BROWNISH GRAY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 60 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-9	L	CL	A-6	0	75-100	75-100	65-90	50-75	30-35	10-15
9-30	CL, L	CL	A-6	0	75-100	75-100	70-95	60-80	30-40	10-20
30-60	L	ML	A-4	0	75-100	75-100	65-85	50-70	30-35	5-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-9	15-25		0.6-2.0	0.16-0.18	6.6-7.8	<2	MODERATE	.28	5	6	2-3	HIGH	LOW
9-30	18-35		0.6-2.0	0.19-0.21	6.6-7.8	<2	MODERATE	.37					
30-60	15-25		0.6-2.0	0.16-0.18	7.9-8.4	<2	LOW	.43					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-	-	B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY 8-15%: MODERATE-PERCS SLOWLY,SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH 15+%: SEVERE-LOW STRENGTH,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-15%: GOOD 15-25%: FAIR-SLOPE 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8%: FAIR-SMALL STONES 8-15%: FAIR-SMALL STONES,SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: FAVORABLE 3+%: SLOPE
TERRACES AND DIVERSIONS	0-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		BARLEY (BU)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	3E	3E	-	4.0	35	75										
6-10%	3E	4E	-	3.5	35	70										
10-15%	4E	6E	-	3.0	30	60										
15-20%	4E	-	-	-	-	-										
20-30%	6E	-	-	-	-	-										
30+%	7E	-	-	-	-	-										

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-10%	FAIR	FAIR	GOOD	-	-	GOOD	POOR	V. POOR	FAIR	-	V. POOR	-
10-15% IRR	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	-
3-20% NIRR	FAIR	FAIR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD
20-30% NIRR	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD
30+% NIRR	V. POOR	V. POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	POOR	-	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	
		0-30%	30+%
ANTELOPE BITTERBRUSH	PUTR2	10	5
BIG SAGEBRUSH	ARTR2	10	5
CANBY BLUEGRASS	POCA	10	5
COLUMBIA NEEDLEGRASS	STCO3	5	
IDAHO FESCUE	FEID	20	10
KENTUCKY BLUEGRASS	POPR		5
MOUNTAIN BROME	BRCA5	5	
SANDBERG BLUEGRASS	POSE		5
SERVICEBERRY	AMELA		15
SNOWBERRY 1/	SYMPH		10
SPIKE-FESCUE	HEKI	10	10
THICKSPIKE WHEATGRASS	AGDA	15	15
POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
FAVORABLE YEARS		2,400	2,200
NORMAL YEARS		2,000	1,800
UNFAVORABLE YEARS		1,400	1,400

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

WY0224

SOIL SURVEY INTERPRETATIONS

MLRA(S): 32, 34
JFY, 2-75
BOROLLIC HAPLARGIDS, FINE-LOAMY, MIXED

DIAMONDVILLE SERIES

THE DIAMONDVILLE SERIES ARE WELL-DRAINED SOILS FORMED IN RESIDIUM FROM SEDIMENTARY BEDROCK ON GENTLY TO MODERATELY STEEPLY-SLOPING UPLAND HILLS AND RIDGES. SLOPES ARE 2 TO 15 PERCENT. ELEVATION IS 4600 TO 7200 FEET. PPT IS 10 TO 14 INCHES. MAST IS 32 TO 46 F. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY TO BROWN LOAM, ABOUT 7 INCHES THICK. THE SUBSOIL IS BROWN CLAY LOAM, ABOUT 13 INCHES THICK. THE SUBSTRATUM IS PALE BROWN LOAM, ABOUT 8 IN. THICK, AND UNDERLAIN BY LOAMSTONE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	L	CL-ML	A-4	0-5	95-100	90-100	85-95	60-75	15-25	5-10
7-20	CL	CL	A-6, A-7	0-5	95-100	90-100	85-95	70-80	35-45	15-25
20-28	L	CL-ML	A-4	0-5	95-100	90-100	85-95	60-75	15-25	5-10
28	WE									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND ERODD. GROUP
0-7	0.6-2.0	0.16-0.18	6.6-7.8	<2	LOW	HIGH	LOW	.37	3	6
7-20	0.6-2.0	0.19-0.21	7.4-8.4	<2	MODERATE	HIGH	LOW	.49		
20-28	0.6-2.0	0.16-0.18	7.9-8.4	<2	LOW	HIGH	LOW	.49		
28										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		20-40	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK
SEWAGE LAGOON AREAS	2-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	2-8%: SLIGHT 8+%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	2-8%: FAIR-THIN LAYER,AREA RECLAIM 8+%: FAIR-SLOPE,THIN LAYER,AREA RECLAIM

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	2-8%: MODERATE-DEPTH TO ROCK 8+%: MODERATE-SLOPE,DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	2-8%: MODERATE-LOW STRENGTH 8+%: MODERATE-SLOPE,LOW STRENGTH
DWELLINGS WITH BASEMENTS	2-8%: MODERATE-LOW STRENGTH,DEPTH TO ROCK 8+%: MODERATE-SLOPE,LOW STRENGTH, DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	2-4%: MODERATE-LOW STRENGTH,CORROSIVE 4-8%: MODERATE-SLOPE,LOW STRENGTH,CORROSIVE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	POOR-THIN LAYER,AREA RECLAIM,LOW STRENGTH
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	2-8%: FAIR-THIN LAYER,AREA RECLAIM 8+%: FAIR-SLOPE,THIN LAYER,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	PIPING,LOW STRENGTH
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	2-3%: DEPTH TO ROCK 3+%: SLOPE,DEPTH TO ROCK
IRRIGATION	SLOPE,ROOTING DEPTH
TERRACES AND DIVERSIONS	2-10%: DEPTH TO ROCK 10+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	2-10%: ROOTING DEPTH 10+%: SLOPE,ROOTING DEPTH

DIAMONDVILLE SERIES WY0224

RECREATION

CAMP AREAS	2-8%: SLIGHT 8+%: MODERATE-SLOPE	PLAYGROUNDS	2-6%: MODERATE-SLOPE, DEPTH TO ROCK 6+%: SEVERE-SLOPE
PICNIC AREAS	2-8%: SLIGHT 8+%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		GRASS HAY (TONS)		PASTURE (AUM)		OATS (BU)		BARLEY (BU)					
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E	4E	-	2.5	-	2.5	-	6	-	55	-	60				

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	POTENTIAL AS HABITAT FOR: WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
3-10% IRR	POOR	FAIR	GOOD	-	-	GOOD	POOR	V. POOR	FAIR	-	V. POOR	-
10+% IRR	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	15
BLUEBUNCH WHEATGRASS	AGSP	10
INDIAN RICEGRASS	ORHY	5
NEEDLEANDTHREAD	STCO4	15
PRAIRIE JUNEGRASS	KOCR	5
THICKSPIKE WHEATGRASS	ACDA	20
CANBY BLUEGRASS	POCA	10
LETTERMAN NEEDLEGRASS	STLE4	10
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1500
NORMAL YEARS		1200
UNFAVORABLE YEARS		700

FOOTNOTES

SCS-SOILS-5
REV. 5-76
FILE CODE SOILS-12

(1)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL INTERPRETATIONS RECORD

KEYING ONLY
RECORD CONTROL
WORD NO.
MLRA 001
STATE 011

MLRA(S) 34, 46, 58B | KIND OF UNIT VARIANT | UNIT NAME DIAMONDVILLE
STATE WYOMING | RECORD NO. | AUTHOR(S) JWW, JFY | DATE 2-82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021: BOROLLIC HAPLARGIDS, FINE-LOAMY, MIXED
DESCR 031: DIAMONDVILLE VARIANT SOILS ARE MODERATELY DEEP, WELL DRAINED SOILS FORMED IN CALCAREOUS MATERIAL DERIVED FROM SANDSTONE. THEY ARE ON TILTED BEDROCK PLAINS. ELEVATIONS ARE 6000 TO 6600 FEET. PPT IS 10 TO 14 INCHES, MAT IS 45 TO 47 F., FFS IS 70 TO 100 DAYS. TYPICALLY, THE SURFACE LAYER IS BROWN SANDY LOAM 2 INCHES THICK. THE SUBSOIL IS BROWN SANDY CLAY LOAM 11 INCHES THICK. THE UPPER PART OF THE SUBSTRATUM IS PALE BROWN LOAM 5 INCHES THICK. THE LOWER PART OF THE SUBSTRATUM IS VERY PALE BROWN, VERY GRAVELLY SANDY LOAM 6 INCHES THICK, UNDERLAIN BY HARD SANDSTONE. SLOPES RANGE FROM 3 TO 120 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041		0-2	SL	SM	A-2	0	90-100	85-100	55-65	25-35	20-30	NP-5
2		2-13	SCL, CL	SC, CL	A-6	0	90-100	85-100	55-75	45-55	30-40	10-20
3		13-18	L, SL	SM-SC, CL-ML	A-4	0	90-100	85-100	55-70	45-55	20-30	5-10
4		18-24	GR-SL, GRV-SL, GR-L	SM, SM-SC	A-2	0-5	75-90	40-60	35-55	20-35	20-30	NP-10
5		24	UWB									
6												

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
PROP 051		14-18		2.0-6.0	0.11-0.13	6.6-7.8	<2	LOW	.28	2	3	.5-1	HIGH	LOW
2	SAME DEPTH AS ABOVE	25-35		0.6-2.0	0.16-0.18	7.4-8.4	<2	MODERATE	.37					
3		18-25		0.6-6.0	0.12-0.16	7.9-9.0	<4	LOW	.32					
4		15-25		2.0-6.0	0.08-0.12	7.9-9.0	<4	LOW	.15					
5														
6														

	FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			>6.0			—		20-40	HARD	—		C	LOW

SANITARY FACILITIES

	FOOTNOTES		KEYING ONLY
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK	FILL 191
LAGOON 081	SEWAGE LAGOONS	3-7%: SEVERE - SEEPAGE, DEPTH TO ROCK 7-20%: SEVERE - SLOPE, SEEPAGE, DEPTH TO ROCK	SAND 201
TRENCH 091	SANITARY LANDFILL (TRENCH)	3-15%: SEVERE - DEPTH TO ROCK, SEEPAGE 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, SEEPAGE	GRAVEL 211
SANARE 101	SANITARY LANDFILL (AREA)	3-15%: SEVERE - DEPTH TO ROCK, SEEPAGE 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, SEEPAGE	SOIL 221
COVER 111	DAILY COVER FOR LANDFILL	3-15%: SEVERE - AREA RECLAIM, THIN LAYER 15-20%: SEVERE - SLOPE, AREA RECLAIM, THIN LAYER	PONDRS 231

BUILDING SITE DEVELOPMENT

	FOOTNOTES		
EXCAV 121	SHALLOW EXCAVATIONS	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK	DIKES 241
DWEL 131	DWELLINGS WITHOUT BASEMENTS	3-8%: MODERATE - DEPTH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 15-20%: SEVERE - SLOPE	PONDAQ 251
DWEL 141	DWELLINGS WITH BASEMENTS	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK	DRAIN 261
BLDGS 151	SMALL COMMERCIAL BUILDINGS	3-4%: MODERATE - DEPTH TO ROCK 4-8%: MODERATE - SLOPE, DEPTH TO ROCK 8-20%: SEVERE - SLOPE	IRRIG 271
ROADS 161	LOCAL ROADS AND STREETS	3-8%: MODERATE - DEPTH TO ROCK, LOW STRENGTH 8-15%: MODERATE - SLOPE, DEPTH TO ROCK, LOW STRENGTH 15-20%: SEVERE - SLOPE	TERRAC 281
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	3-8%: MODERATE - THIN LAYER 8-15%: MODERATE - SLOPE, THIN LAYER 15-20%: SEVERE - SLOPE	WATERW

CONSTRUCTION MATERIAL

FOOTNOTES	
ROADFILL	POOR - AREA RECLAIM, THIN LAYER
SAND	IMPROBABLE - EXCESS FINES
GRAVEL	IMPROBABLE - EXCESS FINES
TOPSOIL	3-8%: MODERATE - AREA RECLAIM, THIN LAYER 8-15%: MODERATE - SLOPE, AREA RECLAIM, THIN LAYER 15-20%: SEVERE - SLOPE

WATER MANAGEMENT

FOOTNOTES	
POND RESERVOIR AREA	3-8%: SEVERE - SEEPAGE 8-20%: SEVERE - SLOPE, SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEVERE - PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SLOPE, DEPTH TO ROCK, SOIL BLOWING
TERRACES AND DIVERSIONS	3-8%: DEPTH TO ROCK, SOIL BLOWING 8-20%: SLOPE, DEPTH TO ROCK, SOIL BLOWING
GRASSED WATERWAYS	3-8%: DEPTH TO ROCK 8-20%: SLOPE, DEPTH TO ROCK

REGIONAL INTERPRETATIONS

FOOTNOTES

REGION 181

288

KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: DIAMONDVILLE VARIANT
UNIT MODIFIER:

RECREATIONAL DEVELOPMENT

KEYING ONLY			FOOTNOTE
CAMPS	301	CAMP AREAS	3-8%: SLIGHT 8-15%: MODERATE-SLOPE 15-20%: SEVERE-SLOPE
PICNIC	311	PICNIC AREAS	3-8%: SLIGHT 8-15%: MODERATE-SLOPE 15-20%: SEVERE-SLOPE
PLAYGD	321	PLAYGROUNDS	3-6%: MODERATE-SLOPE, DEPTH TO ROCK 6-20%: SEVERE-SLOPE
PATHS	331	PATHS AND TRAILS	3-15%: SLIGHT 15-20%: MODERATE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CROPHD 451 — CROPS 341

CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.
3-10%	4E	4E
10-12%	4E	6E
12-15%	6E	6E
15-20%	6E	–

WOODLAND SUITABILITY

WOODS 361

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
ALL							NONE		

WINDBREAKS

WINDBK 381

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL	NONE							

WILDLIFE HABITAT SUITABILITY

WILDLF 391

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	POOR	FAIR	GOOD	–	–	FAIR	V. POOR	V. POOR	POOR	–	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PHASE 401 — PLANT 411

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	15
NEEDLEANDTHREAD	STCO4	15
PRAIRIE JUNEGRASS	KOCR	5
WESTERN WHEATGRASS	AGSM	25
BLUE GRAMA	BOGR2	5
BLUEBUNCH WHEATGRASS	AGSP	5
THREADLEAF SEDGE	CAFI	5
PHLOX	PHLOX	5

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	2000
NORMAL YEARS	1500
UNFAVORABLE YEARS	950

NOTES 441 — SYM. — FOOTNOTES

SOIL INTERPRETATIONS RECORD

MLRA(S): 32
REV. JFY,FS, 4-77
TYPIC NATRARGIDS, FINE, MONTMORILLONITIC, MESIC

EFFINGTON SERIES

THE EFFINGTON SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON FLOOD PLAINS AND ALLUVIAL FANS. SLOPES ARE 0 TO 6 PERCENT. ELEVATION IS 5,000 TO 5,500 FEET. PPT IS ABOUT 7 INCHES. MAST IS 46 TO 51 F., AND THE FFS IS 120 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY CLAY LOAM, ABOUT 3 INCHES THICK. THE SUBSOIL IS GRAYISH-BROWN TO LIGHT BROWNISH-GRAY CLAY, ABOUT 16 INCHES THICK. THE SUBSTRATUM IS LIGHT BROWNISH-GRAY LOAM TO 60 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	CL	CL	A-6	0	75-100	75-100	65-95	55-75	35-40	15-20
0-3	SCL	SM	A-4	0	75-100	75-100	65-90	35-50	35-40	5-10
3-19	C	CL, CH	A-7	0	75-100	75-100	75-100	70-85	45-60	20-35
19-60	L	CL-ML, ML	A-4	0	75-100	75-100	65-90	50-70	25-35	5-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	ERCSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-3			0.2-0.6	0.09-0.11	>8.4	>8	MODERATE	.37	5	4L		HIGH	HIGH
0-3			0.2-0.6	0.07-0.09	>8.4	>8	LOW	.28	5	5			
3-19			0.06-0.2	0.07-0.09	>9.0	>8	HIGH	.32					
19-60			0.2-0.6	0.09-0.11	>8.4	>8	LOW	.49					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-	-	D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE
SANITARY LANDFILL (TRENCH)	SLIGHT
SANITARY LANDFILL (AREA)	SLIGHT
DAILY COVER FOR LANDFILL	FAIR-TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	FAIR-LOW STRENGTH
SAND	UNSUITED-EXCESS FINES
GRAVEL	UNSUITED-EXCESS FINES
TOPSOIL	POOR-TOO CLAYEY,EXCESS SODIUM,EXCESS SALT

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: FAVORABLE 2+%: SLOPE
EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	0-3%: PERCS SLOWLY,EXCESS SODIUM,EXCESS SALT 3+%: SLOPE,PERCS SLOWLY,EXCESS SODIUM
IRRIGATION	0-2%: EXCESS SODIUM,EXCESS SALT,PERCS SLOWLY 2+%: EXCESS SODIUM,PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	PERCS SLOWLY,ERODES EASILY
GRASSED WATERWAYS	

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SLIGHT
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	SEVERE-SHRINK-SWELL
LOCAL ROADS AND STREETS	MODERATE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	MODERATE-PERCS SLOWLY,TOO CLAYEY	PLAYGROUNDS	0-2%: MODERATE-TOO CLAYEY 2-6%: MODERATE-SLOPE,TOO CLAYEY
PICNIC AREAS	MODERATE-TOO CLAYEY	PATHS AND TRAILS	MODERATE-TOO CLAYEY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		BARLEY (BU)		CORN SILAGE (TONS)		OATS (BU)		PASTURE (AUM)		SUGAR BEETS (TONS)			
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6S	4S	-	3.5	-	80	-	15	-	75	-	5	-	16		

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-3% IRR	POOR	POOR	V. POOR	-	-	V. POOR	POOR	V. POOR	POOR	-	V. POOR	-
3+% IRR	POOR	POOR	V. POOR	-	-	V. POOR	POOR	V. POOR	POOR	-	V. POOR	-
0-3% NIRR	POOR	POOR	V. POOR	-	-	V. POOR	POOR	V. POOR	POOR	-	V. POOR	V. POOR
3+% NIRR	POOR	POOR	V. POOR	-	-	V. POOR	POOR	V. POOR	POOR	-	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIRDFOOT SAGEBRUSH 1/	ARFE6	40
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
BUD SAGEBRUSH	ARSP5	10
GARDNER SALTBUSH	ATNU2	5
INDIAN RICEGRASS	ORHY	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	10
WINTERFAT	ELLA5	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		300
NORMAL YEARS		200
UNFAVORABLE YEARS		100

FOOTNOTES

1 NOT USUALLY UTILIZED BY CATTLE AND SHEEP.

MLRA(S): 32
JFY,JEI, 4-75

EMBLEM SERIES

TYPIC CALCIORTHIDS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED, MESIC

THE EMBLEM SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND TERRACES. SLOPES ARE 0 TO 10 PERCENT. ELEVATION IS 3,800 TO 5,100 FEET. PPT IS ABOUT 6 INCHES, MAST IS ABOUT 50 F., AND THE FFS IS 120 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY LOAM ABOUT 4 INCHES THICK. THE UNDERLYING LAYER IS PALE BROWN TO VERY PALE BROWN LOAM ABOUT 26 INCHES THICK AND IS UNDERLAIN BY VERY GRAVELLY SAND TO 60 INCHES OR MORE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-30	L, CL	CL, CL-ML	A-4, A-6	0	80-95	75-95	65-90	50-75	25-35	5-15
0-30	GR-L	GM-GC, SM, GM, SM-SC	A-4	0-10	55-85	50-75	50-65	40-50	25-35	5-10
30-60	GRV-S	GP	A-1	15-25	25-35	20-30	10-20	0-5	-	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND ERODIBILITY GROUP
0-30	0.6-2.0	0.16-0.18	7.9-8.4	<4	MODERATE	HIGH	HIGH	.32	3	4L
0-30	0.6-2.0	0.11-0.15	7.9-8.4	<4	LOW	HIGH	HIGH	.24	3	4L
30-60	>6.0	0.03-0.05	7.9-8.4	<2	LOW	HIGH	HIGH	.15		

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS 1	0-8%: SLIGHT 8+%: MODERATE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE,SMALL STONES 7+%: SEVERE-SLOPE,SEEPAGE,SMALL STONES
SANITARY LANDFILL (TRENCH)	SEVERE-SEEPAGE,SMALL STONES
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8+%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8% L,CL: FAIR-THIN LAYER 8+% L,CL: FAIR-SLOPE,THIN LAYER 0-8% GR-L: FAIR-THIN LAYER,SMALL STONES 8+% GR-L: FAIR-SLOPE,THIN LAYER,SMALL STONES

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-SMALL STONES
DWELLINGS WITHOUT BASEMENTS	0-8% L,CL: MODERATE-LOW STRENGTH 8+% L,CL: MODERATE-SLOPE,LOW STRENGTH 0-8% GR-L: SLIGHT 8+% GR-L: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8+%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4% L,CL: MODERATE-LOW STRENGTH 4-8% L,CL: MODERATE-SLOPE,LOW STRENGTH 0-4% GR-L: SLIGHT 4-8% GR-L: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-LOW STRENGTH,SHRINK-SWELL 8+%: MODERATE-SLOPE,LOW STRENGTH, SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	GOOD
SAND	FAIR-EXCESS FINES
GRAVEL	GOOD
TOPSOIL	0-8% L: FAIR-SMALL STONES 8+% L: FAIR-SLOPE,SMALL STONES GR-L: SEVERE-SMALL STONES 0-8% CL: FAIR-SMALL STONES,TOO CLAYEY 8+% CL: FAIR-SLOPE,SMALL STONES,TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: SEEPAGE 2+%: SLOPE,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEEPAGE
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	0-3%: FAVORABLE 3+%: SLOPE
IRRIGATION	0-2%: FAVORABLE 2+%: SLOPE
TERRACES AND DIVERSIONS	FAVORABLE
GRASSED WATERWAYS	FAVORABLE

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	0-8% L: SLIGHT 8+% L,CL: MODERATE-SLOPE 0-8% GR-L: MODERATE-SMALL STONES 8+% GR-L: MODERATE-SLOPE,SMALL STONES 0-8% CL: MODERATE-TOO CLAYEY	PLAYGROUNDS	0-2% L,CL: MODERATE-SMALL STONES 2-6% L,CL: MODERATE-SLOPE,SMALL STONES 6+% L,CL: SEVERE-SLOPE 0-6% GR-L: SEVERE-SMALL STONES 6+% GR-L: SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	0-8% L: SLIGHT 8+% L,CL: MODERATE-SLOPE 0-8% GR-L: MODERATE-SMALL STONES 8+% GR-L: MODERATE-SLOPE,SMALL STONES 0-8% CL: MODERATE-TOO CLAYEY	PATHS AND TRAILS	L: SLIGHT GR-L: MODERATE-SMALL STONES CL: MODERATE-TOO CLAYEY

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		PASTURE (AUM)		OATS (BU)		BARLEY (BU)		SUGAR BEETS (TONS)		CORN (BU)		CORN SILAGE (TONS)	
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	7E	2S	-	5.0	-	9	-	100	-	110	-	25	-	110	-	22
3-6%	7E	3E	-	4.5	-	8	-	90	-	100	-	22	-	95	-	19
6+%	7E	4E	-	4.0	-	7	-	80	-	90	-	-	-	-	-	-

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
IRR	SIBERIAN ELM		AUSTRIAN PINE		RUSSIAN-OLIVE		COMMON CHOKECHERRY	
	GREEN ASH		ROCKY MT. JUNIPER		LILAC		BLUE SPRUCE	
	PLAINS COTTONWOOD							
NIRR								

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-3% IRR	GOOD	GOOD	GOOD	-	-	GOOD	POOR	V. POOR	GOOD	-	V. POOR	-
3+% IRR	FAIR	GOOD	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	V. POOR	V. POOR	POOR	-	-	POOR	POOR	V. POOR	V. POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	10
BLUEBUNCH WHEATGRASS	AGSP	10
INDIAN RICEGRASS	ORHY	10
NEEDLEANDTHREAD	STCO4	25
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	25
OTHER PERENNIAL GRASSES	PPGG	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		600
NORMAL YEARS		365
UNFAVORABLE YEARS		225

FOOTNOTES

1 EXCESSIVE PERMEABILITY RATE MAY CAUSE POLLUTION OF GROUND WATER.

WY0176

SOIL INTERPRETATIONS RECORD

EMBRY SERIES

MLRA(S): 58, 32
REV. FS-JFY, 2-78
USTIC TORRIORTHENTS, COARSE-LOAMY, MIXED, NONACID, MESIC

THE EMBRY SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND SIDESLOPES. ELEVATION IS 4,200 TO 5,500 FEET. P.P.T. IS 10 TO 14 INCHES, M.A.S.T. IS ABOUT 50 F., AND THE F.F.S. IS 105 TO 130 DAYS. TYPICALLY, THE PROFILE IS LIGHT BROWNISH-GRAY TO PALE BROWN SANDY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-16	SL, LFS	SM	A-2	0	75-100	75-100	50-100	20-35	-	NP
16-60	SL	SM	A-2	0	75-100	75-100	50-100	20-35	-	NP

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-16	3-10		2.0-6.0	0.11-0.13	6.1-7.8	<2	LOW	.28	5	3	1-2	HIGH	LOW
16-60	3-10		2.0-6.0	0.11-0.13	6.1-7.8	<2	LOW	.28					

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES (A)

SEPTIC TANK ABSORPTION FIELDS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SLOPE,SEEPAGE
SANITARY LANDFILL (TRENCH)	SEVERE-SEEPAGE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-SEEPAGE 15+%: SEVERE-SLOPE,SEEPAGE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

CONSTRUCTION MATERIAL

ROADFILL	0-15%: GOOD 15+%: FAIR-SLOPE
SAND	POOR-EXCESS FINES
GRAVEL	UNSUITED
TOPSOIL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: SEEPAGE 2+%: SLOPE,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	PIPING,SEEPAGE
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	0-3%: FAVORABLE 3+%: SLOPE
IRRIGATION	0-3%: SOIL BLOWING 3+%: SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	0-10%: SOIL BLOWING,PIPING 10+%: SLOPE,SOIL BLOWING,PIPING
GRASSED WATERWAYS	0-10%: SOIL BLOWING 10+%: SLOPE,SOIL BLOWING

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: SLIGHT 15+%: MODERATE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		PASTURE (AUM)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	6E	2E	-	5	-	8										
3-6%	6E	3E	-	4	-	7										
6-10%	6E	4E	-	3	-	4										
10-15%	6E	6E	-	-	-	2										
15+%	6E	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
0-3% IRR	GOOD	GOOD	FAIR	-	-	FAIR	GOOD	V. POOR	FAIR	-	POOR	-
3+% IRR	FAIR	GOOD	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUE GRAMA	BOGR2	5
INDIAN RICEGRASS	ORHY	15
LITTLE BLUESTEM	ANSC2	10
NEEDLEANDTHREAD	STCO4	20
PRAIRIE SANDREED	CALO	20
SILVER SAGEBRUSH	ARCA13	5
THREADLEAF SEDGE	CAFI	5
WESTERN WHEATGRASS	AGSM	5
OTHER PERENNIAL GRASSES	PPGG	10
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		2,100
NORMAL YEARS		1,600
UNFAVORABLE YEARS		1,000

FOOTNOTES

A EXCESSIVE PERMEABILITY RATE MAY CAUSE POLLUTION OF GROUND WATER.

MLRA(S): 32
JFY,FS, 10-75
TYPIC HAPLARGIDS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED, MESIC

ETHETE SERIES

THE ETHETE SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON TERRACES. SLOPES ARE 0 TO 6 PERCENT. ELEVATION IS 4,800 TO 5,500 FEET. PPT IS ABOUT 9 INCHES, MAST IS ABOUT 50 F., AND THE FFS IS 110 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY LOAM, ABOUT 4 INCHES THICK. THE SUBSOIL IS BROWN TO PALE BROWN CLAY LOAM, ABOUT 17 INCHES THICK. THE UPPER PART OF THE SUBSTRATUM IS WHITE GRAVELLY CLAY LOAM, ABOUT 13 INCHES THICK, AND THE LOWER PART OF THE SUBSTRATUM IS LIGHT BROWNISH-GRAY VERY GRAVELLY SAND TO 60 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	L	CL-ML, ML	A-4	0	75-100	75-100	65-90	50-75	25-35	5-10
4-21	CL	CL	A-6	0	75-100	75-100	70-100	55-80	35-40	15-20
21-34	GR-CL	GC, CL	A-6	0	50-75	50-75	45-70	40-60	35-40	15-20
34-60	GRV-S	GP	A-1	10-25	30-45	15-25	10-20	0-5	-	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-4	0.6-2.0	0.16-0.18	7.4-8.4	<4	LOW	HIGH	LOW	.37	3	4L
4-21	0.6-2.0	0.19-0.21	7.4-9.0	<4	MODERATE	HIGH	LOW	.28		
21-34	0.6-2.0	0.14-0.16	7.9-9.0	<4	MODERATE	HIGH	LOW	.32		
34-60	>6.0	0.03-0.05	7.9-9.0	<4	LOW	HIGH	LOW	.10		

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SLIGHT
SEWAGE LAGOON AREAS	SEVERE-SEEPAGE
SANITARY LANDFILL (TRENCH)	SEVERE-SEEPAGE
SANITARY LANDFILL (AREA)	SEVERE-SEEPAGE
DAILY COVER FOR LANDFILL	POOR-SMALL STONES,TOO SANDY,AREA RECLAIM

SOURCE MATERIAL

ROADFILL	GOOD
SAND	GOOD
GRAVEL	GOOD
TOPSOIL	POOR-EXCESS SODIUM

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: SEEPAGE 2+%: SLOPE,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEEPAGE
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	0-3%: CUTBANKS CAVE 3+%: SLOPE,CUTBANKS CAVE
IRRIGATION	0-2%: DROUGHTY 2+%: SLOPE,DROUGHTY
TERRACES AND DIVERSIONS	FAVORABLE
GRASSED WATERWAYS	DROUGHTY

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-SMALL STONES,CUTBANKS CAVE
DWELLINGS WITHOUT BASEMENTS	MODERATE-SHRINK-SWELL,LOW STRENGTH
DWELLINGS WITH BASEMENTS	MODERATE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL,LOW STRENGTH 4+%: MODERATE-SLOPE,SHRINK-SWELL, LOW STRENGTH
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	SLIGHT	PLAYGROUNDS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE
PICNIC AREAS	SLIGHT	PATHS AND TRAILS	SLIGHT

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		BARLEY (BU)		CORN SILAGE (TONS)		OATS (BU)		PASTURE (AUM)		SUGAR BEETS (TONS)			
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	6S	2S	-	5.0	-	90	-	20	-	85	-	9	-	20		
3-6%	6E	3E	-	4.5	-	85	-	17	-	80	-	8	-	18		

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
IRR	SIBERIAN ELM GREEN ASH GOLDEN WILLOW		PONDEROSA PINE ROCKY MT. JUNIPER		RUSSIAN-OLIVE COMMON CHOKECHERRY		BLUE SPRUCE LILAC	
NIRR								

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-3% IRR	GOOD	GOOD	POOR	-	-	POOR	POOR	V. POOR	FAIR	-	V. POOR	-
3-6% IRR	FAIR	GOOD	POOR	-	-	POOR	POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	POOR	POOR	-	-	POOR	POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	10
BLUEBUNCH WHEATGRASS	AGSP	10
INDIAN RICEGRASS	ORHY	10
NEEDLEANDTHREAD	STCO4	25
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	25
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		600
NORMAL YEARS		375
UNFAVORABLE YEARS		225

FOOTNOTES

1 EXCESSIVE SEEPAGE MAY CAUSE POLLUTION OF GROUND WATER.
2 ADEQUATE RECOVERY OF SAND AFTER SCREENING.

WY0416

SOIL INTERPRETATIONS RECORD

MLRA(S): 48
RD. 1-78
TYPIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

FARLOW SERIES

THE FARLOW SERIES ARE DEEP WELL DRAINED SOILS FORMED IN RESIDUUM FROM LIMESTONE ON MOUNTAIN SLOPES. ELEVATION IS 8000 TO 10500 FEET. TYPICALLY THEY HAVE CHANNERY LOAM SURFACE LAYERS 10 INCHES THICK THAT OVERLIES A VERY CHANNERY LOAM SUBSTRATUM. AVERAGE ANNUAL PPT IS ABOUT 19 INCHES AND AVERAGE AIR TEMP 38F. VEGETATION IS GRASS AND SHRUBS. SLOPES RANGE FROM 25 TO 50 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-10	CN-L	ML, GM	A-4	5-10	70-80	65-75	60-70	40-55	15-25	NP-5
10-42	CNV-L, FLV-L	GM	A-1, A-2	5-45	35-50	30-40	25-40	20-35	15-25	NP-5
42	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-10	15-25		0.6-2.0	0.12-0.14	7.4-7.8	<2	LOW	.28	3	8	2-5	HIGH	LOW
10-42	18-27		0.6-2.0	0.05-0.07	7.9-8.4	<2	LOW	.28					
42													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		40-60	HARD	-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	SEVERE-SLOPE
DAILY COVER FOR LANDFILL	POOR-SLOPE,SMALL STONES

CONSTRUCTION MATERIAL

ROADFILL	POOR-SLOPE
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	POOR-SLOPE,SMALL STONES

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	SLOPE
IRRIGATION	SLOPE,DROUGHTY,LARGE STONES
TERRACES AND DIVERSIONS	SLOPE,LARGE STONES
GRASSED WATERWAYS	SLOPE,LARGE STONES,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-SLOPE	PLAYGROUNDS	SEVERE-SLOPE, SMALL STONES
PICNIC AREAS	SEVERE-SLOPE	PATHS AND TRAILS	SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
COLUMBIA NEEDLEGRASS	STCO3	15
LETTERMAN NEEDLEGRASS	STLE4	10
IDAHO FESCUE	FEID	10
MOUNTAIN BROME	BRCA5	10
SLENDER WHEATGRASS	AGTR	10
WESTERN WHEATGRASS	AGSM	5
UTAH SERVICEBERRY	AMUT	10
BIG SAGEBRUSH	ARTR2	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1500
NORMAL YEARS		1000
UNFAVORABLE YEARS		775

FOOTNOTES

#Y0083 SOIL INTERPRETATIONS RECORD

MLRA(S): 34, 48
REV. FS.JFY. 5-80
BOROLLIC HAPLARGIDS, FINE-LOAMY, MIXED

FORELLE SERIES

THE FORELLE SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND SIDESLOPES. ELEVATION IS 6500 TO 7800 FEET. PPT IS ABOUT 11 INCHES, MAST IS 42 TO 45F., AND THE FFS IS 80 TO 110 DAYS. TYPICALLY THE SURFACE LAYER IS LIGHT BROWNISH GRAY FINE SANDY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS ABOUT 16 INCHES THICK; THE UPPER 3 INCHES IS BROWN LOAM. THE NEXT 8 INCHES IS BROWN CLAY LOAM AND THE LOWER 5 INCHES IS PALE BROWN LOAM. THE SUBSTRATUM IS LIGHT YELLOWISH BROWN LOAM TO 60 INCHES OR MORE. SLOPES ARE 0 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	FSL	SM	A-4	0-10	85-100	85-100	65-80	40-50	-	NP
0-4	L, SCL	CL-ML, ML	A-4	0-10	85-100	85-100	75-100	55-75	25-35	5-10
4-20	CL, L, SCL	CL	A-6	0-10	85-100	85-100	80-100	50-80	25-35	10-15
20-60	L	CL-ML, ML	A-4	0-10	85-100	85-100	75-100	55-75	25-35	5-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND ERODIBILITY GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	15-20		2.0-6.0	0.13-0.15	6.6-7.8	<2	LOW	.20	5	3	.5-1	HIGH	LOW
0-4	15-27		0.6-2.0	0.16-0.18	6.6-9.0	<2	LOW	.28	5	6	.5-1		
4-20	20-35		0.6-2.0	0.16-0.21	6.6-9.0	<2	MODERATE	.32					
20-60	20-30		0.6-2.0	0.16-0.18	7.9-9.0	<2	LOW	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-	-	B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY 8-15%: MODERATE-PERCS SLOWLY,SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-15%: GOOD 15-25%: FAIR-SLOPE 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8%: FAIR-SMALL STONES 8-15%: FAIR-SMALL STONES,SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% L,SCL: FAVORABLE 3+% L,SCL: SLOPE 0-3% FSL: SOIL BLOWING 3+% FSL: SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	0-8% L,SCL: FAVORABLE 8+% L,SCL: SLOPE 0-8% FSL: SOIL BLOWING 8+% FSL: SLOPE,SOIL BLOWING
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-LARGE STONES 8-15%: MODERATE-LARGE STONES,SLOPE 15+%: SEVERE-SLOPE

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% FSL,SCL: SLIGHT 8-15% FSL,SCL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-15% L: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% FSL,SCL: MODERATE-SMALL STONES 2-6% FSL,SCL: MODERATE-SLOPE,SMALL STONES 0-2% L: MODERATE-SMALL STONES,DUSTY 2-6% L: MODERATE-SLOPE,SMALL STONES,DUSTY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% FSL,SCL: SLIGHT 8-15% FSL,SCL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-15% L: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% FSL,SCL: SLIGHT 15-25% FSL,SCL: MODERATE-SLOPE 0-15% L: MODERATE-DUSTY 15-25% L: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)		ALFALFA HAY (TONS)		OATS (BU)		BARLEY (BU)					
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	6C	3C	-	3.5	-	7	-	3.5	-	80	-	90				
3-6%	6E	3E	-	3.0	-	6	-	3.0	-	70	-	80				
6-10%	6E	4E	-	2.5	-	5	-	2.5	-	55	-	60				
10-15%	6E	6E	-	2.0	-	4	-	2.0	-	-	-	-				
15-30%	6E	-	-	-	-	-	-	-	-	-	-	-				

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-10% IRR	FAIR	FAIR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	-
10-15% IRR	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	
		MOIST	DRY
BIG SAGEBRUSH	ARTR2	10	15
BLUEBUNCH WHEATGRASS	AGSP	5	
GREEN NEEDLEGRASS	STVI4	5	20
NEEDLEANDTHREAD	STCO4	10	
NEEDLELEAF SEDGE	CAEL2	5	
PLAINS REEDGRASS	CAAQ	5	
PRAIRIE JUNEGRASS	KOCR	5	
SANDBERG BLUEGRASS	POSE	5	
THICKSPIKE WHEATGRASS	AGDA	40	
OTHER PERENNIAL FORBS	PPFF	5	
OTHER ANNUAL FORBS	AAFF	5	
WESTERN WHEATGRASS	AGSM		40
INDIAN RICEGRASS	ORHY		5
DOUGLAS RABBITBRUSH	CHVI8		5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
FAVORABLE YEARS		1400	1200
NORMAL YEARS		1100	900
UNFAVORABLE YEARS		600	600

FOOTNOTES

WY0446

SOIL INTERPRETATIONS RECORD

MLRA(S): 32, 33
REV. JEI.JFY. 9-80
USTOLLIC HAPLARGIDS, FINE-LOAMY, MIXED, MESIC

FORKWOOD SERIES

FORKWOOD SERIES ARE WELL DRIANED SOILS FORMED IN ALLUVIUM ON FANS AND VALLEY FILLS.ELEVATION IS 4500 TO 6000FT. PPT IS 10 TO 14 INCHES. MAST IS 48 TO 55F., AND FFS IS 110 TO 130 DAYS. TYPICALLY THE SURFACE LAYER IS LIGHT BROWNISH GRAY VERY FINE SANDY LOAM ABOUT 2 INCHES THICK. THE SUBSOIL IS DARK GRAYISH BROWN CLAY LOAM ABOUT 17 INCHES THICK. THE SUBSTRATUM IS LIGHT GRAY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 15 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-2	VFSL, L	ML	A-4	0	75-100	75-100	70-90	50-70	20-25	NP-5
0-2	FSL	SM	A-2	0	75-100	75-100	70-85	20-35	-	NP
2-19	CL, L	CL	A-6	0	75-100	75-100	70-90	55-75	20-35	10-20
19-60	L, CL	CL-ML, CL	A-4, A-6	0	75-100	75-100	70-90	55-75	20-35	5-15

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-2	12-25		0.6-2.0	0.15-0.17	6.6-8.4	2-4	LOW	.28	5	3	1-2	HIGH	HIGH
0-2	10-20		2.0-6.0	0.13-0.15	6.6-8.4	2-4	LOW	.24	5	3	1-2		
2-19	18-30		0.6-2.0	0.19-0.21	6.6-8.4	2-4	MODERATE	.32					
19-60	20-35		0.6-2.0	0.16-0.18	7.9-9.0	2-4	LOW	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY 8-15%: MODERATE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-SLOPE,TOO CLAYEY
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: FAIR-TOO CLAYEY 8-15%: FAIR-TOO CLAYEY,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8%: FAIR-SMALL STONES 8-15%: FAIR-SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: SOIL BLOWING 3+%: SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	0-8%: SOIL BLOWING 8+%: SLOPE,SOIL BLOWING
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	35
INDIAN RICEGRASS	ORHY	10
WESTERN WHEATGRASS	AGSM	15
PRAIRIE JUNEGRASS	KOCR	5
NEEDLEANDTHREAD	STCO4	10
BIG SAGEBRUSH	ARTR2	10

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	1100
NORMAL YEARS	800
UNFAVORABLE YEARS	500

FOOTNOTES

UT0435

SOIL INTERPRETATIONS RECORD

MLRA(S): 47, 48
BW,AJE, 7-81
ARGIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

FORSEY SERIES

THE FORSEY SERIES ARE VERY DEEP WELL DRAINED SOILS FORMED IN ALLUVIUM, COLLUVIUM AND RESIDUUM DERIVED FROM IGNEOUS ROCKS ON MOUNTAIN SLOPES AND OLD DISSECTED ALLUVIAL FANS UNDER GRASSES AND SHRUBS. THE MAST IS 40 TO 43 F. AAP IS 14 TO 16 INCHES. FFP IS 65 TO 75 DAYS. A TYPICAL PROFILE HAS A GRAYISH BROWN COBBLY LOAM SURFACE 7 INCHES THICK. THE SUBSOIL IS A BROWN VERY COBBLY LOAM 10 INCHES THICK. THE SUBSTRATUM IS A PINKISH GRAY COBBLY SANDY LOAM TO A DEPTH OF 60 INCHES OR MORE. SLOPES ARE 4 TO 60 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	CB-L	SM-SC, CL-ML	A-4	20-35	75-90	70-85	60-75	45-60	25-30	5-10
0-7	CBV-L	GM-GC	A-2, A-4	45-60	50-65	45-60	40-55	30-45	25-30	5-10
7-17	CBV-L, CBV-CL	GM-GC, GC	A-4, A-6	30-50	50-65	45-60	40-60	35-50	30-40	5-15
17-60	CBV-SL, CBV-L	GM, GM-GC, SM-SC, SM	A-1, A-2	35-50	50-70	45-65	30-55	15-35	20-30	NP-10

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-7	15-25	1.25-1.35	0.6-2.0	0.10-0.13	6.6-7.8	-	LOW	.17	5	8	2-4	HIGH	MODERATE
0-7	15-25	1.25-1.35	0.6-2.0	0.07-0.11	6.6-7.8	-	LOW	.10	5	8	2-4		
7-17	20-35	1.25-1.35	0.6-2.0	0.07-0.12	6.6-7.6	-	LOW	.10					
17-60	10-25	1.35-1.45	0.6-2.0	0.06-0.10	7.9-8.4	<2	LOW	.10					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	4-8%: CB: MODERATE-PERCS SLOWLY,LARGE STONES 8-15%: CB: MODERATE-PERCS SLOWLY,SLOPE 15+%: CB: SEVERE-SLOPE 4-15%: CBV: SEVERE-LARGE STONES 15+%: CBV: SEVERE-SLOPE,LARGE STONES
SEWAGE LAGOON AREAS	4-7%: SEVERE-LARGE STONES 7+%: SEVERE-SLOPE,LARGE STONES
SANITARY LANDFILL (TRENCH)	4-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
SANITARY LANDFILL (AREA)	4-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	4-15%: POOR-SMALL STONES 15+%: POOR-SMALL STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	4-15%: CB: FAIR-LARGE STONES 15-25%: CB: FAIR-LARGE STONES,SLOPE 25+%: CB: POOR-SLOPE 4-25%: CBV: POOR-LARGE STONES 25+%: CBV: POOR-LARGE STONES,SLOPE
SAND	INFREQUENT-EXCESS FINES
GRAVEL	INFREQUENT-EXCESS FINES
TOPSOIL	4-15%: POOR-SMALL STONES,AREA RECLAIM 15+%: POOR-SMALL STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	4-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-SEEPAGE,LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,SLOPE
TERRACES AND DIVERSIONS	4-8%: LARGE STONES 8+%: SLOPE,LARGE STONES
GRASSED WATERWAYS	4-8%: LARGE STONES,DROUGHTY 8+%: LARGE STONES,SLOPE,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	4-8%: CB: MODERATE-LARGE STONES 8-15%: CB: MODERATE-LARGE STONES,SLOPE 15+%: CB: SEVERE-SLOPE 4-15%: CBV: SEVERE-LARGE STONES 15+%: CBV: SEVERE-LARGE STONES,SLOPE
DWELLINGS WITHOUT BASEMENTS	4-8%: CB: MODERATE-LARGE STONES 8-15%: CB: MODERATE-SLOPE,LARGE STONES 15+%: CB: SEVERE-SLOPE 4-15%: CBV: SEVERE-LARGE STONES 15+%: CBV: SEVERE-SLOPE,LARGE STONES
DWELLINGS WITH BASEMENTS	4-8%: CB: MODERATE-LARGE STONES 8-15%: CB: MODERATE-SLOPE,LARGE STONES 15+%: CB: SEVERE-SLOPE 4-15%: CBV: SEVERE-LARGE STONES 15+%: CBV: SEVERE-SLOPE,LARGE STONES
SMALL COMMERCIAL BUILDINGS	4-8%: CB: MODERATE-SLOPE,LARGE STONES 8+%: CB: SEVERE-SLOPE 4-8%: CBV: SEVERE-LARGE STONES 8+%: CBV: SEVERE-SLOPE,LARGE STONES
LOCAL ROADS AND STREETS	4-8%: CB: MODERATE-FROST ACTION,LARGE STONES 8-15%: CB: MODERATE-SLOPE,FROST ACTION 15+%: CB: SEVERE-SLOPE 4-15%: CBV: SEVERE-LARGE STONES 15+%: CBV: SEVERE-SLOPE,LARGE STONES
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	4-15%: CB: SEVERE-LARGE STONES 15+%: CB: SEVERE-LARGE STONES,SLOPE 4-15%: CBV: SEVERE-SMALL STONES,LARGE STONES 15+%: CBV: SEVERE-SMALL STONES,LARGE STONES,SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	4-8%: MODERATE-LARGE STONES 8-15% CB: MODERATE-SLOPE,LARGE STONES 15+% CB: SEVERE-SLOPE 4-15% CBV: SEVERE-LARGE STONES 15+% CBV: SEVERE-SLOPE,LARGE STONES	PLAYGROUNDS	4-6%: SEVERE-LARGE STONES,SMALL STONES 6+%: SEVERE-LARGE STONES,SLOPE,SMALL STONES
PICNIC AREAS	4-8% CB: MODERATE-LARGE STONES 8-15% CB: MODERATE-SLOPE,LARGE STONES 15+% CB: SEVERE-SLOPE 4-15% CBV: SEVERE-LARGE STONES 15+% CBV: SEVERE-SLOPE,LARGE STONES	PATHS AND TRAILS	4-15% CB: MODERATE-LARGE STONES 15-25% CB: MODERATE-LARGE STONES,SLOPE 25+% CB: SEVERE-SLOPE 4-25% CBV: SEVERE-LARGE STONES 25+% CBV: SEVERE-LARGE STONES,SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
4-25% CB-L	6E	6E														
4-25% CBV-L	7S	7S														
25+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	UAD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							ACNE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	ACNE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
CB	POOR	FAIR	FAIR	-	POOR	FAIR	V. POOR	V. POOR	FAIR	FAIR	V. POOR	FAIR
CBV	V. POOR	V. POOR	FAIR	-	POOR	FAIR	V. POOR	V. POOR	POOR	FAIR	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (MLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: BARM	COCL				
WESTERN WHEATGRASS	AGSM	50					
NEVADA BLUEGRASS	PONE3	12					
MUTTONGRASS	POFE	5					
ARIZONA FESCUE	FEAR2		20				
MOUNTAIN MUHLY	MUMO		20				
PARRY OATGRASS	DAPA2		10				
WESTERN WHEATGRASS	AGSM		15				
NEEDLEANDTHREAD	STCC4		10				
OTHER PERENNIAL GRASSES	PPGG	13					
OTHER PERENNIAL FORBS	PPFF	8	10				
BIG SAGEBRUSH	ARTR2	5					
OTHER SHRUBS	SSSS	8					
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		1850	2000				
NORMAL YEARS		975	1500				
UNFAVORABLE YEARS		450	800				

FOOTNOTES

SCS-SOILS-5
REV. 5-76
FILE CODE SOILS-12

(1)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL INTERPRETATIONS RECORD

KEYING ONLY RECORD CONTROL: WORD —; MLRA 001; STATE 011

MLRA(S) 33,46 | KIND OF UNIT VARIANT | UNIT NAME FORSEY
STATE WYOMING | RECORD NO. | AUTHOR(S) SEAVEY | DATE 4/82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021: ARGIC CRYOBOROLLS, LOAMY SKELETAL, MIXED

DESCR 031: FORSEY VARIANT SOILS ARE MODERATELY DEEP AND WELL DRAINED. THEY FORMED ON RIPSLOPES OF HARD SANDSTONE IN MOUNTAINS. ELEVATION IS 7000 TO 9000 FEET. PPT IS 15 TO 19 INCHES. FFG IS LESS THAN 70 DAYS. TYPICALLY, THE SURFACE LAYER IS VERY DARK GRAYISH BROWN FLAGGY LOAM ABOUT 6 INCHES THICK. THE UPPER SUBSOIL IS VERY DARK GRAYISH BROWN VERY FLAGGY CLAY LOAM ABOUT 5 INCHES THICK. THE LOWER SUBSOIL IS DARK YELLOWISH BROWN VERY FLAGGY CLAY LOAM ABOUT 16 INCHES THICK. THE SUBSTRATUM IS YELLOWISH BROWN VERY FLAGGY CLAY LOAM TO 39 INCHES. SLOPES RANGE FROM 4 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

PROP	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE: 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
041		0-6	FL-L, FLV-L	CL-ML, GM-GC	A-4	35-65	90-100	90-100	60-85	50-70	25-35	5-10
2		6-27	FLV-CL	CL, GC	A-6	60-70	90-100	90-100	75-90	65-75	35-40	15-20
3		27-39	FLV-CL, FLX-CL	CL, GC	A-6	60-80	90-100	90-100	70-85	60-70	35-40	15-20
4		39	UWB									
5												
6												

PROP	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS: K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY: STEEL	CONCRETE
051	SAME DEPTH AS ABOVE	15-25		0.6-2.0	0.07-0.12	6.6-7.3	—	LOW	.10	2	8	2-4	HIGH	LOW
2		30-35		0.2-0.6	0.07-0.12	6.6-7.3	—	MODERATE	.05					
3		28-33		0.2-0.6	0.07-0.10	6.6-7.8	—	MODERATE	.05					
4														
5														
6														

PROP	FLOODING: FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE: DEPTH (FT)	KIND	MONTHS	CEMENTED PAN: DEPTH (IN)	HARDNESS	BEDROCK: DEPTH (IN)	HARDNESS	SUBSIDENCE: INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
061	NONE			>6.0			—		20-40	HARD	—		B	MODERATE

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	4-15%: SEVERE - DEPTH TO ROCK, PERCS SLOWLY, LARGE STONES; 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, PERCS SLOWLY
LAGOON 081	SEWAGE LAGOONS	4-7%: SEVERE - DEPTH TO ROCK, LARGE STONES; 7-20%: SEVERE - SLOPE, DEPTH TO ROCK, LARGE STONES
TRENCH 091	SANITARY LANDFILL (TRENCH)	4-15%: SEVERE - DEPTH TO ROCK, LARGE STONES; 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, LARGE STONES
SANARE 101	SANITARY LANDFILL (AREA)	4-15%: SEVERE - DEPTH TO ROCK; 15-20%: SEVERE - SLOPE, DEPTH TO ROCK
COVER 111	DAILY COVER FOR LANDFILL	4-15%: SEVERE - AREA RECLAIM, LARGE STONES; 15-20%: SEVERE - SLOPE, AREA RECLAIM, LARGE STONES

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	4-15%: SEVERE - DEPTH TO ROCK, LARGE STONES; 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, LARGE STONES
DWEL 131	DWELLINGS WITHOUT BASEMENTS	4-15%: SEVERE - LARGE STONES; 15-20%: SEVERE - SLOPE, LARGE STONES
DWEL 141	DWELLINGS WITH BASEMENTS	4-15%: SEVERE - DEPTH TO ROCK, LARGE STONES; 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, LARGE STONES
BLDGS 151	SMALL COMMERCIAL BUILDINGS	4-8%: SEVERE - LARGE STONES; 8-20%: SEVERE - SLOPE, LARGE STONES
ROADS 161	LOCAL ROADS AND STREETS	4-15%: SEVERE - LOW STRENGTH, LARGE STONES; 15-20%: SEVERE - SLOPE, LOW STRENGTH, LARGE STONES
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	4-15%: SEVERE - LARGE STONES; 15-20%: SEVERE - SLOPE, LARGE STONES

REGIONAL INTERPRETATIONS

REGION 181

FOOTNOTES

CONSTRUCTION MATERIAL

KEYING ONLY	FOOTNOTES	
FILL 191	ROADFILL	POOR - AREA RECLAIM, LOW STRENGTH, LARGE STONES
SAND 201	SAND	IMPROBABLE - EXCESS FINES, LARGE STONES
GRAVEL 211	GRAVEL	IMPROBABLE - EXCESS FINES, LARGE STONES
SOIL 221	TOPSOIL	4-15%: POOR - AREA RECLAIM, LARGE STONES; 15-20%: POOR - SLOPE, AREA RECLAIM, LARGE STONES

WATER MANAGEMENT

	FOOTNOTES	
PONDRS 231	POND RESERVOIR AREA	4-8%: MODERATE - SLOPE, DEPTH TO ROCK; 8-20%: SEVERE - SLOPE
DIKES 241	EMBANKMENTS DIKES AND LEVEES	SEVERE - THIN LAYER, LARGE STONES
PONDAQ 251	EXCAVATED PONDS AQUIFER FED	NO WATER
DRAIN 261	DRAINAGE	DEEP TO WATER
IRRIG 271	IRRIGATION	SLOPE, LARGE STONES, DEPTH TO ROCK
TERRAC 281	TERRACES AND DIVERSIONS	4-8%: LARGE STONES, DEPTH TO ROCK; 8-20%: SLOPE, LARGE STONES, DEPTH TO ROCK
WATERW	GRASSED WATERWAYS	4-8%: LARGE STONES, DEPTH TO ROCK; 8-20%: SLOPE, LARGE STONES, DEPTH TO ROCK

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KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: FORSEY VARIANT
UNIT MODIFIER:

RECREATIONAL DEVELOPMENT

	FOOTNOTE	KEYING ONLY		FOOTNOTE
CAMPS 301	CAMP AREAS: 4-15%: SEVERE-LARGE STONES; 15-20%: SEVERE-SLOPE, LARGE STONES	PLAYGD 321	PLAYGROUNDS	4-6%: SEVERE-LARGE STONES; 6-20%: SEVERE-SLOPE, LARGE STONES
PICNIC 311	PICNIC AREAS: 4-15%: SEVERE-LARGE STONES; 15-20%: SEVERE-SLOPE, LARGE STONES	PATHS 331	PATHS AND TRAILS	SEVERE-LARGE STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CROPHD 451 / CROPS 341

CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S	--														

WOODLAND SUITABILITY

WOODS 361

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
							NONE		

WINDBREAKS

WINDBK 381

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

WILDLF 391

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	V. POOR	V. POOR	GOOD	-	POOR	GOOD	V. POOR	V. POOR	POOR	V. POOR	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PHASE 401 / PLANT 411

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR 2	5
COLUMBIA NEEDLEGRASS	STOCN	20
IDAHO FESCUE	FEID	25
PRAIRIE JUNEGRASS	KOCR	10
SPIKE FESCUE	HEKI	10
WESTERN WHEATGRASS	AGSM	10

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	1000
NORMAL YEARS	850
UNFAVORABLE YEARS	500

NOTES 441 — SYM. — FOOTNOTES

C00058

SOIL INTERPRETATIONS RECORD

MLRA(S): 67, 69, 72
REV. RO. 4-79
USTIC TORRIFLUVENTS, COARSE-LOAMY, MIXED (CALCAREOUS), MESIC

GLENBERG SERIES

THE GLENBERG SERIES CONSISTS OF DEEP WELL DRAINED SOILS FORMED IN STRATIFIED MODERATELY COARSE ALLUVIUM ON FLOODPLAINS. IN A TYPICAL PROFILE THE SURFACE LAYER IS SANDY LOAM ABOUT 6 INCHES THICK. THE UNDERLYING LAYER IS STRATIFIED CLAY LOAM SANDY LOAM, LOAM, AND LOAMY SAND THAT EXTENDS TO 60 INCHES OR MORE. NATURAL VEGETATION IS DOMINANTLY GRASS. AVERAGE ANNUAL PRECIPITATION IS ABOUT 13 INCHES, MEAN ANNUAL AIR TEMPERATURE IS ABOUT 52 F., AND THE FROST FREE SEASON IS 130 TO 180 DAYS. SLOPES ARE 0 TO 3 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	SL, FSL	SM	A-4, A-2	0	95-100	85-100	60-100	30-45	-	NP
0-6	LS, LFS	SM	A-2	0	95-100	85-100	60-100	25-35	-	NP
0-6	VFSL, L	ML	A-4	0	95-100	95-100	85-100	50-70	15-25	NP-5
6-60	SR-LS-CL	SM	A-2, A-4	0	90-100	75-100	50-100	25-40	-	NP

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-6	10-20		2.0-6.0	0.09-0.13	7.4-8.4	-	LOW	.15	5	3	.5-1	HIGH	LOW
0-6	3-10		6.0-20	0.07-0.10	7.4-8.4	-	LOW	.10	5	2	.5-1		
0-6	10-25		0.6-2.0	0.15-0.18	7.4-8.4	-	LOW	.28	5	4	.5-1		
6-60	8-18		2.0-6.0	0.07-0.12	7.4-9.0	-	LOW	.15					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
RARE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	MODERATE-FLOODS
SEWAGE LAGOON AREAS	SEVERE-SEEPAGE,FLOODS
SANITARY LANDFILL (TRENCH)	MODERATE-FLOODS,TOO SANDY
SANITARY LANDFILL (AREA)	MODERATE-FLOODS
DAILY COVER FOR LANDFILL	FAIR-TOO SANDY

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	L,VFSL,SL,FSL: FAIR-SMALL STONES LS,LFS: FAIR-TOO SANDY,SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	SEVERE-SEEPAGE
EMBANKMENTS, DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	L,VFSL,SL,FSL: DROUGHTY LS,LFS: DROUGHTY,FAST INTAKE
TERRACES AND DIVERSIONS	VFSL,L: TOO SANDY SL,FSL,LS,LFS: TOO SANDY,SOIL BLOWING
GRASSED WATERWAYS	DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-CUTBANKS CAVE
DWELLINGS WITHOUT BASEMENTS	SEVERE-FLOODS
DWELLINGS WITH BASEMENTS	SEVERE-FLOODS
SMALL COMMERCIAL BUILDINGS	SEVERE-FLOODS
LOCAL ROADS AND STREETS	MODERATE-FLOODS
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	MODERATE-DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-FLOODS	PLAYGROUNDS	0-2% VFSL,L: SLIGHT 2-3% VFSL,L: MODERATE-SLOPE 0-2% SL,FSL,LS,LFS: MODERATE-SMALL STONES 2-3% SL,FSL,LS,LFS: MODERATE-SLOPE, SMALL STONES
PICNIC AREAS	SL,FSL,LS,LFS: SLIGHT VFSL,L: MODERATE-DUSTY	PATHS AND TRAILS	SL,FSL,LS,LFS: SLIGHT VFSL,L: MODERATE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY		ALFALFA HAY (TONS)		CORN (BU)		GRAIN SORGHUM (BU)		SUGAR BEETS (TONS)		WHEAT (BU)		CORN SILAGE (TONS)		BARLEY (BU)	
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-1% L,VFSL,SL,FSL	4W	2W		5.0		105	16	65		17	18	50		20		70
1-3% L,VFSL,SL,FSL	4E	2E		5.0		100	16	60		16	18	50		19		70
0-3% LS,LFS	4E	3E		4.5		95	14	55		15	16	40		17		55

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
PE 25-31,PE >31	EASTERN COTTONWOOD	30	SIBERIAN ELM	30	PONDEROSA PINE	25	EASTERN REDCEDAR	15
	RUSSIAN-OLIVE	25	PLAINS COTTONWOOD	25				
PE <25								

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	GOOD	GOOD	-	-	-	-	-	-	GOOD	-	-	-
NIRR	POOR	FAIR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: PE19-25	PE25-31	PE >31	COMMON
BLUE GRAMA	BOGR2	25	10	5	20
SAND DROPSEED	SPCR	10	5	5	10
LITTLE BLUESTEM	ANSC2	10	5	5	-
NEEDLEGRASS	STIPA	15	10	10	10
SIDEOATS GRAMA	BOCU			5	-
SWITCHGRASS	PAVI2	10	15	15	10
SAND BLUESTEM	ANHA		5	15	10
PRAIRIE SANDREED	CALO		20	20	15
SAND SAGEBRUSH	ARFI2	5	5	5	5
SEDGE	CAREX		5	5	-
WESTERN WHEATGRASS	AGSM	5	10		-
THICKSPIKE WHEATGRASS	AGDA	-	-		5
CANADA WILDRYE	ELCA4	-	-		5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS		2000	2500	3000	2000
NORMAL YEARS		1600	2000	2500	1600
UNFAVORABLE YEARS		1500	1000	2000	800

FOOTNOTES

1 SAND AND GRAVEL FREQUENTLY AVAILABLE AT 5 TO 10 FOOT DEPTHS.
2 NOT USUALLY UTILIZED BY CATTLE OR SHEEP.

WY

ND0173

SOIL INTERPRETATIONS RECORD

MLRA(S): 46
REV. RER. 3-79
PACHIC ARGIBOROLLS, FINE, MONTMORILLONITIC

GRAIL SERIES
DRY

THE GRAIL SERIES CONSISTS OF DEEP, WELL-DRAINED SOILS ON UPLAND SWALES, DEPRESSIONS, FANS, AND FOOTSLOPES. THEY FORMED IN LOCAL ALLUVIUM. TYPICALLY THESE SOILS HAVE A DARK GRAYISH-BROWN AND DARK GRAY SILT LOAM SURFACE LAYER 10 IN. THICK. THE SUBSOIL IS 3 IN. OF GRAYISH-BROWN SILTY CLAY LOAM AND 11 IN. OF GRAYISH-BROWN SILTY CLAY. THE SUBSTRATUM IS LIGHT BROWNISH-GRAY AND GRAYISH-BROWN SILTY CLAY LOAM. SLOPES RANGE FROM 0 TO 9 PERCENT. SOILS ARE CROPPED OR USED FOR HAY AND PASTURE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-13	SIL	CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	70-90	25-45	10-25
0-13	SICL	CL	A-6, A-7	0	100	100	95-100	85-95	30-45	15-30
0-13	CL	CL	A-6	0	100	100	90-100	70-80	30-45	15-30
13-24	SIC, SICL, C	CL, CH	A-7	0	100	100	95-100	70-95	35-55	15-35
24-60	L, SICL, C	CL, CL-ML	A-4, A-6, A-7	0	100	100	85-100	60-95	30-55	10-30

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-13	15-27	1.10-1.40	0.2-0.6	0.22-0.24	6.1-7.3	<2	MODERATE	.32	5	6	4-6	HIGH	LOW
0-13	27-35	1.10-1.40	0.2-0.6	0.20-0.23	6.1-7.3	<2	MODERATE	.32	5	7	4-6		
0-13	27-35	1.10-1.40	0.2-0.6	0.18-0.20	6.1-7.3	<2	MODERATE	.32	5	7	4-6		
13-24	35-45	1.20-1.60	0.06-0.2	0.14-0.17	6.6-7.3	<2	HIGH	.32					
24-60	18-45	1.20-1.70	0.06-0.2	0.13-0.22	7.4-8.4	<4	MODERATE	.32					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-TOO CLAYEY
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-9%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-TOO CLAYEY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-9%: MODERATE-TOO CLAYEY,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-9%: MODERATE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-9%: MODERATE-SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-9%: MODERATE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: PERCS SLOWLY 3+%: PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	0-8%: PERCS SLOWLY 8+%: SLOPE,PERCS SLOWLY
GRASSED WATERWAYS	0-8%: PERCS SLOWLY 8+%: SLOPE,PERCS SLOWLY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-9%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-9%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	WHEAT, SPRING (BU)		OATS (BU)		BARLEY (BU)		ALFALFA HAY (TONS)							
		NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-4%	3E	2E	30	50	70	100	45	80	2.0	5.0						
4-8%	3E	3E	25	40	78	80	43	70	1.9	4.8						

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
0-6%	EASTERN COTTONWOOD	42	SIBERIAN ELM	28	AMERICAN ELM	21	GREEN ASH	21
	PONDEROSA PINE	21	BLACK HILLS SPRUCE	21	BLUE SPRUCE	21	EASTERN REDCEDAR	14
	ROCKY MT. JUNIPER	14	SIBERIAN PEASHRUB	9	TATARIAN HONEYSUCKLE	9	AMERICAN PLUM	9
6-9%	SIBERIAN ELM	25	GREEN ASH	18	PONDEROSA PINE	18	RUSSIAN-OLIVE	14
	SIBERIAN PEASHRUB	8	EASTERN REDCEDAR	10	ROCKY MT. JUNIPER	10	TATARIAN HONEYSUCKLE	7
	AMERICAN PLUM	7						

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-6%	GOOD	GOOD	FAIR	-	-	GOOD	POOR	V. POOR	GOOD	-	V. POOR	FAIR
6-9%	FAIR	GOOD	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	
		0-3%	3-9%
BIG BLUESTEM	ANGE	25	-
GREEN NEEDLEGRASS	STVI4	15	10
WESTERN WHEATGRASS	AGSM	10	20
NEEDLEANDTHREAD	STCO4	10	15
BLUE GRAMA	BOGR2	-	10
PRAIRIE JUNEGRASS	KOCR	-	10
KENTUCKY BLUEGRASS	POPR	5	5
OTHER PERENNIAL GRASSES	PPGG	20	10
PENNSYLVANIA SEDGE	CAPE6	-	5
OTHER PERENNIAL GRASSLIKES	PPGL	5	5
OTHER SHRUBS	SSSS	5	5
OTHER PERENNIAL FORBS	PPFF	5	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
FAVORABLE YEARS		3300	2800
NORMAL YEARS		2900	2400
UNFAVORABLE YEARS		2500	1900

FOOTNOTES

WY9043 SOIL INTERPRETATIONS RECORD

MLRA(S): 58B, 34
JWW,JFY, 1-82
TYPIC HAPLARGIDS, FINE-LOAMY, MIXED, MESIC

GRIFFY VARIA

GRIFFY VARIANT SOILS ARE DEEP, WELL DRAINED SOILS FORMED IN CALCAREOUS ALLUVIUM DERIVED FROM SANDY SHALE. THEY ARE ON BROAD RELICT TERRACES AND ALLUVIAL FANS. ELEVATION IS 5000 TO 6000 FEET. PPT IS 5 TO 9 INCHES. MAST IS 46 TO 52 F. FFS IS 120 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS PALE BROWN SANDY CLAY LOAM 1 INCH THICK. THE SUBSOIL IS BROWN CLAY LOAM 5 INCHES THICK. THE UPPER PART OF THE SUBSTRATUM IS VERY PALE BROWN CLAY LOAM 7 INCHES THICK. THE LOWER PART OF T SUBSTRATUM IS PALE BROWN SILTY CLAY LOAM TO 60 INCHES. SLOPES RANGE FROM 1 TO 10 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-1	SCL	SC, CL	A-6	0	90-100	80-100	60-80	45-60	30-35	10-15
1-6	SCL, CL	CL	A-6	0	90-100	80-100	55-75	50-60	30-40	10-20
6-13	CL, GR-CL	CL	A-6	0	70-100	70-90	55-75	50-60	35-40	15-20
13-30	CL, SICL	CL	A-6	0	85-100	75-90	70-80	65-75	35-40	15-20
30-60	GR-CL, GR-SICL	CL	A-6	0	60-100	60-75	50-65	50-65	35-40	15-20

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-1	20-25		0.6-6.0	0.14-0.16	7.4-8.4	<2	MODERATE	.32	5	5	.5-1	HIGH	LOW
1-6	25-34		0.6-2.0	0.16-0.18	7.9-8.4	<2	MODERATE	.37					
6-13	28-32		0.6-2.0	0.14-0.17	8.5-9.0	2-4	MODERATE	.37					
13-30	28-32		0.6-2.0	0.18-0.20	8.5-9.0	2-4	MODERATE	.37					
30-60	28-32		0.6-2.0	0.12-0.15	8.5-9.0	2-4	MODERATE	.20					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	1-8%: MODERATE-PERCS SLOWLY 8-10%: MODERATE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	1-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	1-8%: MODERATE-TOO CLAYEY 8-10%: MODERATE-SLOPE,TOO CLAYEY
SANITARY LANDFILL (AREA)	1-8%: SLIGHT 8-10%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	1-8%: FAIR-TOO CLAYEY,SMALL STONES 8-10%: FAIR-TOO CLAYEY,SMALL STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	FAIR-LOW STRENGTH,SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	1-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	1-8%: SLIGHT 8-10%: MODERATE-SLOPE
DWELLINGS WITHOUT BASEMENTS	1-8%: MODERATE-SHRINK-SWELL 8-10%: MODERATE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	1-8%: MODERATE-SHRINK-SWELL 8-10%: MODERATE-SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	1-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	1-8%: SLIGHT 8-10%: MODERATE-SLOPE

EMBANKMENTS DIKES AND LEVEES	SLIGHT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	1-3%: FAVORABLE 3+%: SLOPE
TERRACES AND DIVERSIONS	1-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY
GRASSED WATERWAYS	1-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	1-8%: SLIGHT 8-10%: MODERATE-SLOPE	PLAYGROUNDS	1-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	1-8%: SLIGHT 8-10%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
1-6%	6E	3E														
6-10%	6E	4E														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORTY.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX
							NONE	

WINDBREAKS

CLASS-DETERMING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGEL WILDLF
ALL	V. POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
WESTERN WHEATGRASS	AGSM	20
NEEDLEANDTHREAD	STCO4	10
BLUEBUNCH WHEATGRASS	AGSP	25
BIG SAGEBRUSH	ARTR2	5
BLUE GRAMA	BOGR2	5
THREADLEAF SEDGE	CAFI	5
		5
PHLOX	PHLOX	5

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	500
NORMAL YEARS	375
UNFAVORABLE YEARS	225

FOOTNOTES

WY0132 SOIL INTERPRETATIONS RECORD

MLRA(S): 34 HATERTON SERIES
REV. JFY.JRS. 3-77
TYPIC TORRIORTHENTS. LOAMY. MIXED (CALCAREOUS). FRIGID. SHALLOW

THE HATERTON SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SHALE ON UPLANDS. ELEVATION IS 6,800 TO 7,200 FEET. PPT IS ABOUT 8 INCHES, MAST IS ABOUT 45 F., AND THE FFS IS 100 TO 110 DAYS. TYPICALLY, THE PROFILE IS LIGHT OLIVE BROWN TO GRAYISH-BROWN LOAM AND IS UNDERLAIN BY BEDROCK AT A DEPTH OF 14 INCHES. SLOPES ARE 6 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-14	L	CL-ML, ML	A-4	0	75-100	75-100	70-100	50-70	25-30	5-10
14	WB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-14			0.6-2.0	0.16-0.18	7.9-9.0	2-4	LOW	.37	2	4L		HIGH	MODERATE
14													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	6-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	6-25%: SEVERE-DEPTH TO ROCK 25+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	6-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	3-15%: POOR-THIN LAYER,AREA RECLAIM 15+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	6-8%: MODERATE-DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	6-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

CONSTRUCTION MATERIAL

ROADFILL	6-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	UNSUITED-EXCESS FINES
GRAVEL	UNSUITED-EXCESS FINES
TOPSOIL	6-15%: POOR-AREA RECLAIM,THIN LAYER 15+%: POOR-SLOPE,AREA RECLAIM,THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,LOW STRENGTH,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	6-10%: DEPTH TO ROCK 10+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	SLOPE,ROOTING DEPTH

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	6-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	6-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	6-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
6-8%	V. POOR	V. POOR	POOR	-	-	POOR	POOR	V. POOR	V. POOR	-	V. POOR	POOR
8+%	V. POOR	V. POOR	POOR	-	-	POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	5
BLACK SAGEBRUSH	ARARN	5
BLUEBUNCH WHEATGRASS	AGSP	30
INDIAN RICEGRASS	ORHY	10
NEEDLEANDTHREAD	STCO4	5
NEEDLELEAF SEDGE 1/	CAEL2	5
SANDBERG BLUEGRASS	POSE	10
THICKSPIKE WHEATGRASS	AGDA	15
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		450
NORMAL YEARS		350
UNFAVORABLE YEARS		200

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

WY0444

SOIL INTERPRETATIONS RECORD

MLRA(S): 32

HAVERDAD SERIES

REV. JEI.JFY. 9-80

USTIC TORRIFLUVENTS. FINE-LOAMY. MIXED (CALCAREOUS). MESIC

HAVERDAD SERIES ARE WELL DRAINED SOIL FORMED IN ALLUVIUM ON FLOODPLAINS. ELEVATION IS 4000 TO 5000FT. PPT IS 10 TO 14 INCHES. MAST IS 48 TO 53F.. AND FFS IS 110 TO 130 DAYS. TYPICALLY. THE SURFACE LAYER IS LIGHT YELLOWISH BROWN LOAM. ABOUT 6 INCHES THICK. THE UNDERLYING MATERIAL IS LIGHT YELLOWISH BROWN LOAM STRATIFIED WITH THIN LENSES OF FINE SANDY LOAM. SANDY LOAM. AND SILTY CLAY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 6 PERCENT.

ESTIMATED SOIL PROPERTIES (A)

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	VFSL. L	CL-ML	A-4	0	75-100	75-100	70-90	50-70	20-25	5-10
0-6	CL	CL	A-6	0	75-100	75-100	70-90	60-80	25-35	10-15
6-60	SR-FSL-SICL	CL-ML	A-4	0	75-100	75-100	70-90	50-60	20-25	5-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	13-27		0.6-2.0	0.16-0.18	7.4-9.0	2-8	LOW	.28	5	4L	1-2	HIGH	HIGH
0-6	27-35		0.6-2.0	0.19-0.21	7.4-9.0	2-8	MODERATE	.32	5	4L	1-2		
6-60	20-35		0.6-2.0	0.16-0.18	7.9-9.0	2-4	LOW	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
RARE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	MODERATE-FLOODING.PERCS SLOWLY
SEWAGE LAGOON AREAS	SEVERE-FLOODING
SANITARY LANDFILL (TRENCH)	MODERATE-FLOODING.TOO CLAYEY
SANITARY LANDFILL (AREA)	MODERATE-FLOODING
DAILY COVER FOR LANDFILL	FAIR-TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	VFSL.L: FAIR-SMALL STONES.EXCESS SALT CL: FAIR-TOO CLAYEY.SMALL STONES.EXCESS SALT

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SLIGHT
DWELLINGS WITHOUT BASEMENTS	SEVERE-FLOODING
DWELLINGS WITH BASEMENTS	SEVERE-FLOODING
SMALL COMMERCIAL BUILDINGS	SEVERE-FLOODING
LOCAL ROADS AND STREETS	MODERATE-FLOODING
LAWNS. LANDSCAPING AND GOLF FAIRWAYS	MODERATE-EXCESS SALT

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-6%: MODERATE-SEEPAGE.SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: EXCESS SALT 3+%: SLOPE.EXCESS SALT
TERRACES AND DIVERSIONS	FAVORABLE
GRASSED WATERWAYS	EXCESS SALT

REGIONAL INTERPRETATIONS

316

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-FLOODING	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES,EXCESS SALT 2-6%:MODERATE-SLOPE,SMALL STONES,EXCESS SALT
PICNIC AREAS	MODERATE-EXCESS SALT	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	–	–	FAIR	POOR	V. POOR	POOR	–	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ALKALI SACATON	SPAI	20
BASIN WILDRYE	ELCI2	20
CANADA WILDRYE	ELCA4	5
INLAND SALTGRASS	DIST	5
SHADSCALE	ATCO	5
WESTERN WHEATGRASS	AGSM	10
GREASEWOOD	SARCO	20
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1200
NORMAL YEARS		900
UNFAVORABLE YEARS		600

FOOTNOTES

A BULK TEXTURE OF 6 TO 60 INCH LAYER IS LOAM.

WY0002

SOIL INTERPRETATIONS RECORD

MLRA(S): 32, 48, 58, 67
REV. JFY, 1-80
USTERTIC CAMBORTHIDS, FINE, MONTMORILLONITIC, MESIC

HELOT SERIES

THE HELOT SERIES ARE WELL TO MODERATELY WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND VALLEY SIDE SLOPES. ELEVATION RANGES FROM 4000 TO 5500 FEET. PPT IS ABOUT 11 TO 15 INCHES. MAST IS 47 TO 59F. FFS IS 110 TO 140 DAYS. TYPICALLY THE SURFACE LAYER IS LIGHT BROWNISH GRAY SILTY CLAY LOAM ABOUT 6 INCHES THICK. THE UNDERLYING LAYERS ARE LIGHT GRAY TO LIGHT BROWNISH GRAY SILTY CLAY TO 60 INCHES. SLOPES RANGE FROM 0 TO 25 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	SIC, SICL, CL	CH, CL	A-7	0	95-100	95-100	95-100	75-95	45-55	25-35
6-60	SIC, CL, C	CH, CL	A-7	0	95-100	95-100	95-100	75-95	45-55	25-35

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-6	30-45		0.06-0.6	0.12-0.17	7.9-9.0	<8	HIGH	.28	5	4	.5-2	HIGH	HIGH
6-60	35-50		0.06-0.6	0.12-0.17	7.9-9.0	<8	HIGH	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST-ACTION
NONE			>6.0			-		>60		-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-HARD TO PACK 15+%: POOR-HARD TO PACK,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-TOO CLAYEY,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH,SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8% SICL,CL: SLIGHT 8-15% SICL,CL: MODERATE-SLOPE 15+% SICL,CL: SEVERE-SLOPE 0-15% SIC: SEVERE-TOO CLAYEY 15+% SIC: SEVERE-SLOPE,TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH,SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8% SICL,CL: FAIR-TOO CLAYEY 8-15% SICL,CL: FAIR-TOO CLAYEY,SLOPE 15+% SICL,CL: POOR-SLOPE 0-15% SIC: POOR-TOO CLAYEY 15+% SIC: POOR-TOO CLAYEY,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	MODERATE-HARD TO PACK
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% SICL,CL: PERCS SLOWLY 3+% SICL,CL: PERCS SLOWLY,SLOPE 0-3% SIC: SLOW INTAKE,PERCS SLOWLY 3+% SIC: SLOW INTAKE,PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	0-8%: PERCS SLOWLY 8+%: SLOPE,PERCS SLOWLY
GRASSED WATERWAYS	0-8%: EXCESS SALT,PERCS SLOWLY 8+%: SLOPE,EXCESS SALT,PERCS SLOWLY

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% SICL,CL: SLIGHT 8-15% SICL,CL: MODERATE-SLOPE 0-8% SIC: MODERATE-TOO CLAYEY 8-15% SIC: MODERATE-SLOPE,TOO CLAYEY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% SICL,CL: SLIGHT 2-6% SICL,CL: MODERATE-SLOPE 0-2% SIC: MODERATE-TOO CLAYEY 2-6% SIC: MODERATE-SLOPE,TOO CLAYEY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% SICL,CL: SLIGHT 8-15% SICL,CL: MODERATE-SLOPE 0-8% SIC: MODERATE-TOO CLAYEY 8-15% SIC: MODERATE-SLOPE,TOO CLAYEY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% SICL,CL: SLIGHT 15-25% SICL,CL: MODERATE-SLOPE 0-15% SIC: MODERATE-TOO CLAYEY 15-25% SIC: MODERATE-TOO CLAYEY,SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		WHEAT (BU)		ALFALFA HAY (TONS)		BARLEY (BU)		SUGAR BEETS (TONS)		CORN (BU)		CORN SILAGE (TONS)		OATS (BU)	
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
1-3%	4S	3S	24	55	-	4.5	-	85	-	20	-	90	-	25	-	90
3-6%	4E	3E	20	55	-	4.0	-	80	-	-	-	-	-	-	-	85
6+%	6E	4E	-	50	-	3.0	-	70	-	-	-	-	-	-	-	75

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL	RUSSIAN-OLIVE	10	LILAC	7	ROCKY MT. JUNIPER	7	GREEN ASH	11
	SIBERIAN ELM	14	SIBERIAN PEASHRUB	7				

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
1-3% IRR	FAIR	FAIR	POOR	-	-	POOR	POOR	POOR	FAIR	-	POOR	
3-6% IRR	FAIR	FAIR	POOR	-	-	POOR	POOR	V. POOR	FAIR	-	V. POOR	
1-6% NIRR	FAIR	FAIR	POOR	-	-	POOR	POOR	V. POOR	FAIR	-	V. POOR	POOR
6+% NIRR	POOR	FAIR	POOR	-	-	POOR	V. POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		SUMMER PPT	WINTER PPT				
BIG SAGEBRUSH	ARTR2	10	15				
BLUE GRAMA	BOGR2	10	-				
PLAINS REEDGRASS	CAMO	5	-				
PRAIRIE JUNEGRASS	KOCR	5	5				
THREADLEAF SEDGE	CAFI	5	-				
WESTERN WHEATGRASS	AGSM	45	45				
GREEN NEEDLEGRASS	STVI4	15	5				
SANDBERG BLUEGRASS	POSE	5	5				
BOTTLEBRUSH SQUIRRELTAIL	SIHY		5				
WINTERFAT	EULAS		5				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		1700	1200				
NORMAL YEARS		1200	900				
UNFAVORABLE YEARS		500	600				

FOOTNOTES

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

(1)

SOIL INTERPRETATIONS RECORD

KEYING ONLY RECORD CONTROL: WORD —; MLRA 001; STATE 011

MLRA(S) 32, 33, 34 | KIND OF UNIT SERIES | UNIT NAME HILAND
STATE WYOMING | RECORD NO. | AUTHOR(S) LKM, JFY | DATE 5/82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION (CLASS 021, DESCR 031)

HILAND SERIES ARE VERY DEEP, WELL DRAINED SOILS FORMED IN ALLUVIUM OR EOLIAN DEPOSITS ON RELICT SURFACES. PPT IS 10 TO 14 INCHES, MAST IS 47 TO 55 F, FFS IS 110 TO 130 DAYS. ELEVATION IS 4500 TO 6300 FEET. TYPICALLY THE SURFACE LAYER IS GRAYISH BROWN SANDY LOAM ABOUT 2 INCHES THICK. THE UPPER SUBSOIL IS BROWN SANDY LOAM ABOUT 5 INCHES THICK. THE LOWER SUBSOIL IS LIGHT YELLOWISH BROWN SANDY CLAY LOAM ABOUT 15 INCHES THICK. THE SUBSTRATUM IS PALE BROWN SANDY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

PROP	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
041		0-2	SL, LS	SM	A-2	0	95-100	90-100	50-75	15-30	—	NP
2		0-2	FSL	SM	A-2	0	95-100	90-100	65-85	20-35	<20	NP-5
3		2-7	SL, SCL	SM-SC, SC	A-2, A-4, A-6	0	95-100	90-100	50-75	30-50	15-25	5-15
4		7-22	SCL	SC, CL	A-6	0	95-100	90-100	50-75	40-60	30-40	10-20
5		22-60	SL, LS, FSL	SM	A-2	0	95-100	75-100	45-75	15-30	<20	NP-5
6												

PROP	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM^3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
051		8-18		6.0-20	0.07-0.12	7.4-7.8	—	LOW	.20	5	3	1-2	HIGH	MODERATE
2	SAME DEPTH AS ABOVE	8-18		2.0-6.0	0.13-0.15	7.4-7.8	—	LOW	.24	5	3	1-2		
3		18-25		0.6-6.0	0.12-0.15	7.4-7.8	—	MODERATE	.28					
4		20-35		0.6-2.0	0.14-0.16	7.4-8.4	—	MODERATE	.28					
5		8-16		2.0-20	0.07-0.14	7.9-9.0	2-4	LOW	.20					
6														

PROP	FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INITIAL (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
061	NONE			>6.0			—		>60		—		B	LOW

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE - POOR FILTER 15-20%: SEVERE - SLOPE, POOR FILTER
LAGOON 081	SEWAGE LAGOONS	0-7%: SEVERE - SEEPAGE 7-20%: SEVERE - SLOPE, SEEPAGE
TRENCH 091	SANITARY LANDFILL (TRENCH)	0-15%: SEVERE - SEEPAGE 15-20%: SEVERE - SLOPE, SEEPAGE
SANARE 101	SANITARY LANDFILL (AREA)	0-15%: SEVERE - SEEPAGE 15-20%: SEVERE - SLOPE, SEEPAGE
COVER 111	DAILY COVER FOR LANDFILL	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE
DWEL 131	DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE
DWEL 141	DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE
BLDGS 151	SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE - SLOPE 8-20%: SEVERE - SLOPE
ROADS 161	LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-20%: SEVERE - SLOPE

REGIONAL INTERPRETATIONS

REGION 181 — FOOTNOTES —

CONSTRUCTION MATERIAL

KEYING ONLY

	FOOTNOTES	
FILL 191	ROADFILL	0-15%: GOOD 15-20%: FAIR - SLOPE
SAND 201	SAND	IMPROBABLE - EXCESS FINES
GRAVEL 211	GRAVEL	IMPROBABLE - EXCESS FINES
SOIL 221	TOPSOIL	0-8%: GOOD 8-15%: FAIR - SLOPE 15-20%: POOR - SLOPE

WATER MANAGEMENT

	FOOTNOTES	
PONDRS 231	POND RESERVOIR AREA	0-8%: SEVERE - SEEPAGE 8-20%: SEVERE - SLOPE, SEEPAGE
DIKES 241	EMBANKMENTS DIKES AND LEVEES	SEVERE - PIPING
PONDAQ 251	EXCAVATED PONDS AQUIFER FED	NO WATER
DRAIN 261	DRAINAGE	DEEP TO WATER
IRRIG 271	IRRIGATION	0-3%: SOIL BLOWING 3-20%: SLOPE, SOIL BLOWING
TERRAC 281	TERRACES AND DIVERSIONS	0-8%: SOIL BLOWING 8-20%: SLOPE, SOIL BLOWING
WATERW	GRASSED WATERWAYS	0-8%: FAVORABLE 8-20%: SLOPE

320

KEYING ONLY: SECOND No. | CONTROL WORD | CONTROL NO.

UNIT NAME: HILAND
UNIT MODIFIER:

RECREATIONAL DEVELOPMENT

	FOOTNOTE	KEYING ONLY			FOOTNOTE
CAMPS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15-20%: SEVERE-SLOPE	PLAYGD	321	PLAYGROUNDS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE 6-20%: SEVERE-SLOPE
PICNIC	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15-20%: SEVERE-SLOPE	PATHS	331	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

FOOTNOTE

CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.														
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	4E	3E														
6-10%	4E	4E														
10-15%	4E	6E														
15+%	6E	—														

WOODLAND SUITABILITY

FOOTNOTE

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
							NONE		

WINDBREAKS

FOOTNOTE

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

FOOTNOTE

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
0-6% IRR	GOOD	GOOD	—	—	—	—	POOR	V. POOR	GOOD	—	V. POOR	—
6+% IRR	FAIR	FAIR	—	—	—	—	V. POOR	V. POOR	FAIR	—	V. POOR	—
NIRR	POOR	FAIR	FAIR	—	—	FAIR	V. POOR	V. POOR	FAIR	—	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

FOOTNOTE

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: THIN SURF <3	THICK SURF >3			
WHEATGRASS	AGROPZ	25	10			
NEEDLEANDTHREAD	STCO4	25	25			
BLUE GRAMA	BOGR2	15				
GREEN NEEDLEGRASS	STVI4	10				
CUSICK BLUEGRASS	POCU3	5				
PRAIRIE SANDREED	CALO		20			
INDIAN RICEGRASS	ORHY		15			
THREADLEAF SEDGE	CAFI		10			
BIG SAGEBRUSH	ARTR2	10	5			
SILVER SAGEBRUSH	ARCA13		5			
POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
FAVORABLE YEARS		2000	2100			
NORMAL YEARS		1500	1600			
UNFAVORABLE YEARS		850	1000			

SYM.

FOOTNOTES

GPO 882-874

WY0322

SOIL INTERPRETATIONS RECORD

MLRA(S): 48, 33, 46
REV. JFY. 11-79
ARGIC CRYOBOROLLS, FINE-LOAMY, MIXED

INCHAU SERIES

THE INCHAU SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM INTERBEDDED SANDSTONE AND SHALE ON UPLANDS. ELEVATIONS ARE 7,800 TO 8,500 FEET. PPT IS ABOUT 18 INCHES AND MAST IS ABOUT 41 F. TYPICALLY, THE SURFACE LAYER IS GRAYISH-BROWN LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS ABOUT 18 INCHES THICK; THE UPPER 4 INCHES IS GRAYISH-BROWN LOAM AND THE LOWER 14 INCHES IS BROWN GRAVELLY LOAM. THE SUBSTRATUM IS LIGHT OLIVE BROWN GRAVELLY LOAM ABOUT 8 IN. THICK AND IS UNDERLAIN BY BEDROCK AT A DEPTH OF 30 IN. SLOPES ARE 0 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-8	L	CL-ML, ML	A-4	0	75-100	75-100	70-90	50-70	25-35	5-10
0-8	GR-L	GM-GC, GM	A-4	0-10	55-75	50-75	45-70	35-50	25-35	5-10
8-30	GR-L, GR-CL, CL	GM-GC, GC, CL	A-4, A-6	0-10	55-85	50-85	45-80	35-60	25-35	5-15
30	WB	CL-ML								

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-8	15-27		0.6-2.0	0.16-0.18	6.1-7.8		LOW	.32	3	5	2-5	HIGH	LOW
0-8	15-27		0.6-2.0	0.11-0.15	6.1-7.8		LOW	.28	3	5	2-5		
8-30	20-35		0.6-2.0	0.11-0.15	6.1-7.8		MODERATE	.28					
30													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		20-40	SOFT	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-DEPTH TO ROCK,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK,SHRINK-SWELL 8-15%: MODERATE-DEPTH TO ROCK,SLOPE, SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-FROST ACTION,SHRINK-SWELL 8-15%: MODERATE-SLOPE,FROST ACTION, SHRINK-SWELL 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-THIN LAYER 8-15%: MODERATE-SLOPE,THIN LAYER 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-SMALL STONES 15+%: POOR-SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE,DEPTH TO ROCK 3-8%: MODERATE-SEEPAGE,DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DEPTH TO ROCK 3+%: DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% L: SLIGHT 8-15% L: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% L: MODERATE-SMALL STONES 2-8% L: MODERATE-SLOPE,SMALL STONES 8+% L: SEVERE-SLOPE 0-8% GR: SEVERE-SMALL STONES 8+% GR: SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	0-8% L: SLIGHT 8-15% L: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-30%	6E															
30+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-30%	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
30+%	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		LOW PPT	HIGH PPT				
BASIN WILDRYE	ELCI2	5					
BIG SAGEBRUSH	ARTR2	5					
BLUEBUNCH WHEATGRASS	AGSP	20					
GRIFFITH WHEATGRASS	AGGR3	10					
IDAHO FESCUE	FEID	10					
NEEDLEANDTHREAD	STCO4	10					
PARRY DANTHONIA	DAPA2	5					
PRAIRIE JUNEGRASS	KOCR	5					
SPIKE-FESCUE	HEKI	5					
THREETIP SAGEBRUSH	ARTR4	5					
ELK SEDGE	CAGE2		20				
GAMBEL OAK	QUGA		10				
MOUNTAIN BROME	BRMA4		10				
UTAH SERVICEBERRY	AMUT		10				
WHEATGRASS	AGROP2		10				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		2,000	3000				
NORMAL YEARS		1,500	2000				
UNFAVORABLE YEARS		800	1500				

FOOTNOTES

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

(1)

SCS-SOIL-5

SOIL INTERPRETATIONS RECORD

KEYING ONLY: RECORD NO. | CONTROL WORD NO. | MLRA 001 | STATE 011

MLRA(S) 33,46 | KIND OF UNIT VARIANT | UNIT NAME INCHAU

STATE WYOMING | RECORD NO. | AUTHOR(S) LKM, JFY | DATE 5/82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021

DESCR 031: INCHAU VARIANTS ARE MODERATELY DEEP, WELL DRAINED SOILS. THEY FORMED IN ALLUVIUM AND RESIDUUM DERIVED FROM HARD SANDSTONE IN MOUNTAIN PARKS. PRT IS 15 TO 19 INCHES. MAST IS ABOUT 42 F. FFS IS LESS THAN 60 DAYS. TYPICALLY THE SURFACE LAYER IS DARK BROWN LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS DARK YELLOWISH BROWN LOAM ABOUT 19 INCHES THICK. HARD FRACTURED SANDSTONE OCCURS AT 23 INCHES. SLOPES RANGE FROM 3 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041		0-4	L	ML-CL	A-4	0-25	85-100	85-100	60-80	50-70	20-30	5-10
2		4-23	L, CL, CB-CL	CL, GC	A-6	10-40	85-100	85-100	60-80	50-70	25-35	10-15
3		23	UWB									
4												
5												
6												

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
PROP 051	SAME DEPTH AS ABOVE	20-25		0.2-2.0	0.14-0.17	6.1-7.3	—	LOW	.32	3	6	2-4	HIGH	LOW
2		25-35		0.2-2.0	0.16-0.20	6.1-7.3	—	MODERATE	.32					
3														
4														
5														
6														

	FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			>6.0			—		20-40	HARD	—		B	MODERATE

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	3-15%: SEVERE - DEPTH TO ROCK, PERCS SLOWLY 15-20%: SEVERE - SLOPE, DEPTH TO ROCK, PERCS SLOWLY
LAGOON 081	SEWAGE LAGOONS	3-7%: SEVERE - DEPTH TO ROCK 7-20%: SEVERE - SLOPE, DEPTH TO ROCK
TRENCH 091	SANITARY LANDFILL (TRENCH)	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK
SANARE 101	SANITARY LANDFILL (AREA)	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK
COVER 111	DAILY COVER FOR LANDFILL	3-15%: SEVERE - AREA RECLAIM, THIN LAYER 15-20%: SEVERE - SLOPE, AREA RECLAIM, THIN LAYER

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK
DWEL 131	DWELLINGS WITHOUT BASEMENTS	3-8%: MODERATE - SHRINK-SWELL, DEPTH TO ROCK 8-15%: MODERATE - SLOPE, SHRINK-SWELL, DEPTH TO ROCK 15-20%: SEVERE - SLOPE
DWEL 141	DWELLINGS WITH BASEMENTS	3-15%: SEVERE - DEPTH TO ROCK 15-20%: SEVERE - SLOPE, DEPTH TO ROCK
BLDGS 151	SMALL COMMERCIAL BUILDINGS	3-4%: MODERATE - SHRINK-SWELL, DEPTH TO ROCK 4-8%: MODERATE - SLOPE, SHRINK-SWELL, DEPTH TO ROCK 8-20%: SEVERE - SLOPE
ROADS 161	LOCAL ROADS AND STREETS	3-15%: SEVERE - LOW STRENGTH 15-20%: SEVERE - SLOPE, LOW STRENGTH
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	3-8%: MODERATE - THIN LAYER 8-15%: MODERATE - SLOPE, THIN LAYER 15-20%: SEVERE - SLOPE

CONSTRUCTION MATERIAL

KEYING ONLY		FOOTNOTES	
FILL 191	ROADFILL	POOR - AREA RECLAIM, LOW STRENGTH, THIN LAYER	
SAND 201	SAND	IMPROBABLE - EXCESS FINES	
GRAVEL 211	GRAVEL	IMPROBABLE - EXCESS FINES	
SOIL 221	TOPSOIL	3-15%: SEVERE - AREA RECLAIM, THIN LAYER 15-20%: SEVERE - SLOPE, AREA RECLAIM, THIN LAYER	

WATER MANAGEMENT

KEYING ONLY		FOOTNOTES	
PONDRS 231	POND RESERVOIR AREA	3-8%: MODERATE - SLOPE, SEEPAGE, DEPTH TO ROCK 8-20%: SEVERE - SLOPE	
DIKES 241	EMBANKMENTS DIKES AND LEVEES	SEVERE - THIN LAYER	
PONDAQ 251	EXCAVATED PONDS AQUIFER FED	NO WATER	
DRAIN 261	DRAINAGE	DEEP TO WATER	
IRRIG 271	IRRIGATION	SLOPE, DEPTH TO ROCK	
TERRAC 281	TERRACES AND DIVERSIONS	3-8%: DEPTH TO ROCK 8-20%: SLOPE, DEPTH TO ROCK	
WATERW	GRASSED WATERWAYS	3-8%: DEPTH TO ROCK 8-20%: SLOPE, DEPTH TO ROCK	

REGIONAL INTERPRETATIONS

REGION 181 | FOOTNOTES:

KEYING ONLY: RECORD NO. | CONTROL WORD | NO.

UNIT NAME: INCHAU VARIANT RECREATIONAL DEVELOPMENT
UNIT MODIFIER:

	FOOTNOTE	KEYING ONLY		FOOTNOTE
CAMP AREAS	3-8%: MODERATE - DUSTY 8-15%: MODERATE - SLOPE, DUSTY 15-20%: SEVERE - SLOPE	PLAYGD	321	PLAYGROUNDS: 3-6%: MODERATE - SLOPE, DEPTH TO ROCK, DUSTY 6-20%: SEVERE - SLOPE
PICNIC AREAS	3-8%: MODERATE - DUSTY 8-15%: MODERATE - SLOPE, DUSTY 15-20%: SEVERE - SLOPE	PATHS	331	PATHS AND TRAILS: 3-15%: MODERATE - DUSTY 15-20%: MODERATE - SLOPE, DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

FOOTNOTE

CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

FOOTNOTE

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
							NONE		

WINDBREAKS

FOOTNOTE

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

FOOTNOTE

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	POOR	FAIR	GOOD	—	—	GOOD	POOR	V. POOR	FAIR	—	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

FOOTNOTE

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
IDAHO FESCUE	FEID	20
COLUMBIA NEEDLEGRASS	STOCN	20
BLUEBUNCH WHEATGRASS	AGSP	10
SPIKE-FESCUE	HEKI	20
BIG SAGEBRUSH	ARTR2	10

POTENTIAL PRODUCTION (LBS./AC. DRY WT):

	ALL
FAVORABLE YEARS	1600
NORMAL YEARS	1350
UNFAVORABLE YEARS	1100

SYM. FOOTNOTES

NOTES

GPO 882-974

WY0246

SOIL INTERPRETATIONS RECORD

MLRA(S): 43, 46, 48

IRIGUL SERIES

REV. JFY. 7-80

LITHIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

THE IRIGUL SERIES ARE WELL-DRAINED SOILS FORMING IN RESIDIUM FROM SCHIST ON GENTLY SLOPING TO MODERATELY STEEP UPLANDS. ELEVATION IS 7000 TO 9000 FEET. PPT IS 11 TO 22 INCHES. MAST IS 40 TO 44F. TYPICALLY THE PROFILE IS GRAYISH BROWN TO YELLOWISH BROWN CHANNERY LOAM ABOUT 13 INCHES THICK. UNDERLAIN BY SCHIST. SLOPES RANGE FROM 0 TO 75 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	CNV-L	GM-GC	A-2	10-15	15-50	15-50	10-30	10-30	20-30	5-10
0-6	CN-L	GM-GC	A-4	0-10	55-80	50-75	45-60	35-55	20-30	5-10
6-13	CNV-L, CNV-CL, CNX-L	GM-GC	A-2	10-15	50-75	15-50	10-35	10-30	20-30	5-10
13	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	18-27		0.6-2.0	0.05-0.07	7.4-7.8	-	LOW	.28	1	6	1-3	HIGH	LOW
0-6	18-27		0.6-2.0	0.09-0.11	7.4-7.8	<2	LOW	.24	1	6	1-3		
6-13	18-35		0.6-2.0	0.05-0.10	7.4-7.8	<2	LOW	.24					
13													

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		5-20	HARD	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-SMALL STONES,THIN LAYER 15+%: SEVERE-SMALL STONES,SLOPE,THIN LAYER

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DROUGHTY,DEPTH TO ROCK 3+%: DROUGHTY,DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DROUGHTY,DEPTH TO ROCK 8+%: SLOPE,DROUGHTY,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-SMALL STONES,DEPTH TO ROCK 15+%:SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-SMALL STONES,DEPTH TO ROCK 6+%: SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-SMALL STONES,DEPTH TO ROCK 15+%:SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK	PATHS AND TRAILS	0-25%: SEVERE-SMALL STONES 25+%: SEVERE-SLOPE,SMALL STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLACK SAGEBRUSH	ARARN	10
BLUEBUNCH WHEATGRASS	AGSP	5
CALIFORNIA OATGRASS	DACA3	5
COLUMBIA NEEDLEGRASS	STCO3	10
IDAHO FESCUE	FEID	10
MOUNTAIN MUHLY	MUMO	5
ONESPIKE OATGRASS	DAUN	5
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
SLENDER WHEATGRASS	AGTR	5
THREETIP SAGEBRUSH	ARTR4	5
WESTERN WHEATGRASS	AGSM	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		950
NORMAL YEARS		800
UNFAVORABLE YEARS		450

FOOTNOTES

S O I L I N T E R P R E T A T I O N S R E C O R D

LRA(S): 33, 46
MP,JFY, 1-82
TYPIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED, SHALLOW

IRIGUL VARIA

RIGUL VARIANTS ARE SHALLOW, WELL DRAINED SOILS FORMED IN RESIDUUM DERIVED FROM IGNEOUS ROCK AND GNEISS. THEY ARE ON TEEP MOUNTAINSIDES AND RIDGES. PPT IS 15 TO 19 INCHES. MAST IS 43 TO 46 F. FFS IS LESS THAN 60 DAYS. ELEVATION IS 760(TO 9000 FEET. TYPICALLY, THE UPPER SURFACE LAYER IS VERY COBBLY SANDY LOAM ABOUT 5 INCHES THICK. THE LOWER SURFACE LAYE IS VERY GRAVELLY SANDY LOAM ABOUT 10 INCHES THICK OVER SOFT WEATHERED GNEISS. SLOPES RANGE FROM 6 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-5	CBV-SL	GM-GC	A-4	35-50	80-95	75-85	55-70	35-45	25-30	5-10
0-5	CBV-SCL	GM-GC	A-4	35-50	80-95	75-85	55-70	35-50	25-30	5-10
5-15	GRV-SL, GRV-SCL	SC, SM-SC	A-2	15-30	65-75	55-60	30-45	20-35	25-30	5-10
15	WB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-5	15-20		6.0-20	0.06-0.10	6.6-7.3	-	LOW	.10	1	8	1-2	MODERATE	LOW
0-5	15-22		2.0-6.0	0.08-0.17	6.6-7.3	-	LOW	.10	1	8	1-2		
5-15	15-25		2.0-20	0.06-0.10	6.6-7.3	-	LOW	.10					
15													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		8-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	6-7%: SEVERE-SEEPAGE,DEPTH TO ROCK 7+%: SEVERE-SEEPAGE,DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	6-15%: SEVERE-DEPTH TO ROCK,SEEPAGE 15+%: SEVERE-DEPTH TO ROCK,SEEPAGE,SLOPE
SANITARY LANDFILL (AREA)	6-15%: SEVERE-DEPTH TO ROCK,SEEPAGE 15+%: SEVERE-DEPTH TO ROCK,SEEPAGE,SLOPE
DAILY COVER FOR LANDFILL	6-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	6-8%: MODERATE-DEPTH TO ROCK,LARGE STONES 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, LARGE STONES 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	6-8%: MODERATE-SLOPE,DEPTH TO ROCK, LARGE STONES 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	6-8%: MODERATE-DEPTH TO ROCK,LARGE STONES 8-15%: MODERATE-DEPTH TO ROCK,SLOPE, LARGE STONES 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	6-15%: SEVERE-LARGE STONES,THIN LAYER 15+%: SEVERE-LARGE STONES,SLOPE,THIN LAYER

CONSTRUCTION MATERIAL

ROADFILL	6-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	6-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	6-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	6-8%: LARGE STONES,DEPTH TO ROCK 8+%: SLOPE,LARGE STONES,DEPTH TO ROCK
GRASSED WATERWAYS	6-8%: LARGE STONES,DROUGHTY 8+%: LARGE STONES,SLOPE,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	6-15%: SEVERE-LARGE STONES,DEPTH TO ROCK 15+%:SEVERE-SLOPE,LARGE STONES,DEPTH TO ROCK	PLAYGROUNDS	SEVERE-LARGE STONES,SLOPE,DEPTH TO ROCK
PICNIC AREAS	6-15%: SEVERE-LARGE STONES,DEPTH TO ROCK 15+%:SEVERE-SLOPE,LARGE STONES,DEPTH TO ROCK	PATHS AND TRAILS	6-15%: MODERATE-LARGE STONES 15-25%: MODERATE-LARGE STONES,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:		
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGEL WILDLF
ALL	V. POOR	POOR	POOR	-	-	POOR	V. POOR	V. POOR	POOR	-	-	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
		20
IDAHO FESCUE	FEID	25
BLUEBUNCH WHEATGRASS	AGSP	15
WESTERN WHEATGRASS	AGSM	10
PRAIRIE JUNEGRASS	KOCR	10

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	950
NORMAL YEARS	800
UNFAVORABLE YEARS	450

FOOTNOTES

WY0089

SOIL INTERPRETATIONS RECORD

MLRA(S): 58
REV. FS-JFY, 7-79
HAPLUSTOLLIC NATRARGIDS, FINE-LOAMY, MIXED, MESIC

KEYNER SERIES

THE KEYNER SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM FROM ALKALINE SHALE AND SANDSTONE ON ALLUVIAL FANS AND FOOTSLOPES. ELEVATION IS 4500 TO 5500 FEET. PPT IS 10 TO 14 INCHES. MAST IS ABOUT 52 F., AND FFS IS 100 TO 105 DAYS. TYPICALLY THE SURFACE LAYER IS LIGHT GRAY LOAMY SAND ABOUT 6 INCHES THICK. THE SUBSOIL IS ABOUT 20 INCHES THICK. THE UPPER 12 INCHES IS GRAYISH BROWN SANDY CLAY LOAM AND THE LOWER 8 INCHES IS LIGHT BROWNISH GRAY FINE SANDY LOAM. SUBSTRATUM IS LIGHT BROWNISH GRAY FINE SANDY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 15 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	LS	SM	A-2	0	75-100	75-100	50-75	15-30	-	NP
6-18	SCL	SC	A-6	0	75-100	75-100	60-90	35-50	30-40	15-20
18-60	FSL	SM	A-4	0	75-100	75-100	50-85	35-50	15-25	NP-5

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND ERODI. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	3-8		2.0-6.0	0.06-0.08	7.4-9.0	<2	LOW	.10	5	2	.5-1	HIGH	LOW
6-18	25-35		0.06-0.2	0.10-0.12	>7.8	<8	MODERATE	.24					
18-60	5-12		2.0-6.0	0.06-0.08	>8.4	2-8	LOW	.20					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8%: FAIR-TOO SANDY,SMALL STONES 8-15%: FAIR-TOO SANDY,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-SEEPAGE 8+%: SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	DROUGHTY,FAST INTAKE,SOIL BLOWING
TERRACES AND DIVERSIONS	0-8%: SOIL BLOWING 8+%: SLOPE,SOIL BLOWING
GRASSED WATERWAYS	0-8%: DROUGHTY,PERCS SLOWLY 8+%: SLOPE,DROUGHTY,PERCS SLOWLY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-DROUGHTY 8-15%: MODERATE-DROUGHTY,SLOPE

REGIONAL INTERPRETATIONS

KEYNER SERIES WYO069

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	6S															
6-15%	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		COOL	WARM				
BIG SAGEBRUSH	ARTR2	10	-				
BLUE GRAMA	BOGR2	10	15				
GREEN NEEDLEGRASS	STVI4	10	-				
LITTLE BLUESTEM	ANSC2	5	-				
NEEDLEANDTHREAD	STCO4	15	-				
THICKSPIKE WHEATGRASS	AGDA	5	-				
WESTERN WHEATGRASS	AGSM	25	10				
OTHER PERENNIAL FORBS	PPFF	10	-				
OTHER ANNUAL FORBS	AAFF	5	-				
OTHER ANNUAL GRASSES	AAGG	5	-				
ALKALI SACATON	SPAI		50				
INLAND SALTGRASS	DIST		15				
BUFFALOGRASS	BUDA		5				
SAND SAGEBRUSH	ARFI2		5				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		2000	1600				
NORMAL YEARS		1500	1000				
UNFAVORABLE YEARS		850	700				

FOOTNOTES

SOIL INTERPRETATIONS RECORD

KEYING ONLY — RECORD NO. | CONTROL WORD NO. | MLRA 001 | STATE 011

MLRA(S) 33, 46 — KIND OF UNIT VARIANT — UNIT NAME KEZAR
STATE WYOMING — RECORD NO. — AUTHOR(S) LKM, JFY — DATE 2/82 — REVISED — UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021: MISC. CRYOBOROLLS, FINE-LOAMY, MIXED

DESCR 031: KEZAR VARIANT SOILS ARE MODERATELY DEEP AND WELL DRAINED. THEY FORMED IN MATERIAL WEATHERED FROM IGNEOUS ROCK OR SHALE ON MOUNTAIN SLOPES. TYPICALLY, THE SURFACE LAYER IS LOAM ABOUT 3 INCHES THICK. THE SUBSOIL IS GRAVELLY SANDY CLAY LOAM ABOUT 12 INCHES THICK. THE SUBSTRATUM IS GRAVELLY SANDY CLAY LOAM ABOUT 4 INCHES THICK OVER SOFT WEATHERED IGNEOUS ROCK OR GNEISS. PPT IS 15 TO 19 INCHES. THE FROST-FREE SEASON IS LESS THAN 90 DAYS. SLOPES RANGE FROM 5 TO 35 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041		0-3	L	ML-CL, CL	A-4, A-6	0-5	80-100	75-100	60-90	55-75	25-35	5-15
2		3-15	GR-SCL, CB-SCL	SC	A-2, A-6	5-20	70-90	60-75	20-50	15-40	30-40	10-20
3		15-24	GR-SCL, GRV-SL	GM, GM-GC, SM, SM-SC	A-1, A-2	5-15	60-80	40-70	25-40	15-35	20-30	NP-10
4		24	WB									
5												
6												

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
PROP 051		15-25		0.6-2.0	0.16-0.18	6.6-7.3	<2	LOW	.28	2	5	2-3	HIGH	LOW
2	SAME	18-30		0.2-2.0	0.10-0.13	6.6-7.3	<2	MODERATE	.20					
3	DEPTH	14-25		0.6-6.0	0.06-0.11	6.6-7.3	<2	LOW	.15					
4	AS													
5	ABOVE													
6														

	FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			76.0			—		20-40	SOFT	—		B	MODERATE

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	5-15%: SEVERE - DEPTH TO ROCK 15-35%: SEVERE - SLOPE - DEPTH TO ROCK
LAGOON 081	SEWAGE LAGOONS	5-15%: SEVERE + SEEPAGE, DEPTH TO ROCK 15-35%: SEVERE - SLOPE, SEEPAGE, DEPTH TO ROCK
TRENCH 091	SANITARY LANDFILL (TRENCH)	5-15%: SEVERE - SEEPAGE, DEPTH TO ROCK 15-35%: SEVERE - SLOPE, SEEPAGE, DEPTH TO ROCK
SANARE 101	SANITARY LANDFILL (AREA)	5-15%: SEVERE - SEEPAGE, DEPTH TO ROCK 15-35%: SEVERE - SLOPE, SEEPAGE, DEPTH TO ROCK
COVER 111	DAILY COVER FOR LANDFILL	5-15%: SEVERE - AREA RECLAIM, THIN LAYER 15-35%: SEVERE - SLOPE, AREA RECLAIM, THIN LAYER

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	5-8%: MODERATE - DEPTH TO ROCK 8-15%: MODERATE - SLOPE, DEPTH TO ROCK 15-35%: SEVERE - SLOPE
DWEL 131	DWELLINGS WITHOUT BASEMENTS	5-8%: MODERATE - SHRINK-SWELL 8-15%: MODERATE - SLOPE, SHRINK-SWELL 15-35%: SEVERE - SLOPE
DWEL 141	DWELLINGS WITH BASEMENTS	5-8%: MODERATE - DEPTH TO ROCK, SHRINK-SWELL 8-15%: MODERATE - SLOPE, DEPTH TO ROCK, SHRINK-SWELL 15-35%: SEVERE - SLOPE
BLDGS 151	SMALL COMMERCIAL BUILDINGS	5-8%: MODERATE - SLOPE, SHRINK-SWELL 8-35%: SEVERE - SLOPE
ROADS 161	LOCAL ROADS AND STREETS	5-8%: SLIGHT 8-15%: MODERATE - SLOPE 15-35%: SEVERE - SLOPE
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	5-8%: MODERATE - THIN LAYER 8-8%: MODERATE - SLOPE, THIN LAYER 15-35%: SEVERE - SLOPE

REGIONAL INTERPRETATIONS

	FOOTNOTES	
REGION 181		

KEYING ONLY

FILL	191	ROADFILL
SAND	201	SAND
GRAVEL	211	GRAVEL
SOIL	221	TOPSOIL
PONDRS	231	POND RESERVOIR AREA
DIKES	241	EMBANKMENTS DIKES AND LEVEES
PONDAQ	251	EXCAVATED PONDS AQUIFER FED
DRAIN	261	DRAINAGE
IRRIG	271	IRRIGATION
TERRAC	281	TERRACES AND DIVERSIONS
WATERW		GRASSED WATERWAYS

CONSTRUCTION MATERIAL

FOOTNOTES	
ROADFILL	5-25%: POOR - THIN LAYER 25-35%: POOR - SLOPE, THIN LAYER
SAND	IMPROBABLE - EXCESS FINES
GRAVEL	IMPROBABLE - EXCESS FINES
TOPSOIL	5-15%: POOR - SMALL STONES 15-35%: POOR - SLOPE, SMALL STONES

WATER MANAGEMENT

FOOTNOTES	
POND RESERVOIR AREA	5-8%: SEVERE - SEEPAGE 8-35%: SEVERE - SLOPE, SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEVERE - THIN LAYER
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SLOPE, DEPTH TO ROCK
TERRACES AND DIVERSIONS	5-8%: DEPTH TO ROCK 8-35%: SLOPE, DEPTH TO ROCK
GRASSED WATERWAYS	5-8%: DEPTH TO ROCK 8-35%: SLOPE, DEPTH TO ROCK

KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: KIZAR VARIANT — RECREATIONAL DEVELOPMENT
UNIT MODIFIER:

KEYING ONLY			FOOTNOTE	KEYING ONLY			FOOTNOTE
CAMPS	301	CAMP AREAS	5-8%: MODERATE - DUSTY 8-15%: MODERATE - SLOPE, DUSTY 15-35%: SEVERE - SLOPE	PLAYGD	321	PLAYGROUNDS	5-6%: MODERATE - SLOPE, DUSTY 6-35%: SEVERE - SLOPE
PICNIC	311	PICNIC AREAS	5-8%: MODERATE - DUSTY 8-15%: MODERATE - SLOPE, DUSTY 15-35%: SEVERE - SLOPE	PATHS	331	PATHS AND TRAILS	5-15%: MODERATE - DUSTY 15-25%: MODERATE - SLOPE, DUSTY 25-35%: SEVERE - SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CROPHD 451 / CROPS 341

FOOTNOTE	CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
	ALL	6E	--														

WOODLAND SUITABILITY

WOODS 361 / 371

FOOTNOTE	CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
								NONE		

WINDBREAKS

WINDBK 381

FOOTNOTE	CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
		NONE							

WILDLIFE HABITAT SUITABILITY

WILDLF 391

FOOTNOTE	CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
	ALL	POOR	POOR	GOOD	—	—	GOOD	V. POOR	V. POOR	FAIR	—	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PHASE 401 / PLANT 411 / 421

FOOTNOTE	COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
	COLUMBIA NEEDLEGRASS	STCO3	20
	SPIKE FESCUE	HEKI	20
	IDAHO FESCUE	FEID	20
	BLUEBUNCH WHEATGRASS	AGSP	10
	BIG SAGEBRUSH	ARTR2	10
	RABBITBRUSH	CHRYS9	5

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	1,600
NORMAL YEARS	1,350
UNFAVORABLE YEARS	1,100

NOTES 441 — SYM. — FOOTNOTES

WY0442

SOIL INTERPRETATIONS RECORD

MLRA(S): 32, 33
REV. JEI,JFY, 9-80
USTIC TORRIORTHENTS, FINE-LOAMY, MIXED (CALCAREOUS), MESIC

KISHONA SERIES

KISHONA SERIES ARE WELL-DRAINED SOILS FORMING ON ALLUVIAL FANS. ELEVATION IS 4500 TO 6000 FEET. PPT IS 10 TO 14 INCHES. MAST IS 49 TO 59F. FFS IS 110 TO 130 DAYS. TYPICALLY THE SURFACE LAYER IS LIGHT BROWNISH GRAY LOAM ABOUT 4 INCHES THICK. THE SUBSTRATUM IS YELLOWISH BROWN LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	L, VFSL	ML	A-4	0	85-100	75-100	65-85	55-75	25-30	NP-5
0-4	CL, SICL	CL	A-6	0	85-100	75-100	70-90	70-80	30-40	10-20
0-4	FSL	SM	A-2	0	85-100	75-100	65-80	20-35	-	NP
4-60	L, CL, SICL	CL-ML, CL	A-4, A-6	0	85-100	75-100	70-90	65-80	20-30	5-15

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	10-27		0.6-2.0	0.16-0.18	7.4-8.4	2-4	LOW	.28	5	4L	.5-1	HIGH	HIGH
0-4	27-35		0.6-2.0	0.19-0.21	7.4-8.4	4-8	MODERATE	.32	5	6	.5-1		
0-4	8-15		2.0-6.0	0.13-0.15	7.4-8.4	2-4	LOW	.24	5	3	.5-1		
4-60	20-35		0.6-2.0	0.10-0.17	7.9-9.0	2-8	MODERATE	.32					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY 8-15%: MODERATE-PERCS SLOWLY,SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-SLOPE,TOO CLAYEY 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: FAIR-TOO CLAYEY 8-15%: FAIR-TOO CLAYEY,SLOPE 15+%: POOR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-15%: FAIR-SHRINK-SWELL 15-25%: FAIR-SLOPE,SHRINK-SWELL 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8%: FAIR-SMALL STONES 8-15%: FAIR-SMALL STONES,SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% L,VFSL,CL,SICL: EXCESS SALT 3+% L,VFSL,CL,SICL: SLOPE,EXCESS SALT 0-3% FSL: SOIL BLOWING,EXCESS SALT 3+% FSL: SOIL BLOWING,SLOPE,EXCESS SALT
TERRACES AND DIVERSIONS	0-8% L,VFSL,CL,SICL: FAVORABLE 8+% L,VFSL,CL,SICL: SLOPE 0-8% FSL: SOIL BLOWING 8+% FSL: SLOPE,SOIL BLOWING
GRASSED WATERWAYS	0-8%: EXCESS SALT 8+%: SLOPE,EXCESS SALT

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-EXCESS SALT 8-15%: MODERATE-EXCESS SALT,SLOPE 15+%: SEVERE-SLOPE

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: MODERATE-EXCESS SALT 8-15%: MODERATE-SLOPE,EXCESS SALT 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES,EXCESS SALT 2-6%:MODERATE-SLOPE,SMALL STONES,EXCESS SALT 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: MODERATE-EXCESS SALT 8-15%: MODERATE-SLOPE,EXCESS SALT 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	35
INDIAN RICEGRASS	ORHY	10
WESTERN WHEATGRASS	AGSM	15
PRAIRIE JUNEGRASS	KOCR	5
NEEDLEANDTHREAD	STCO4	10
BIG SAGEBRUSH	ARTR2	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1100
NORMAL YEARS		800
UNFAVORABLE YEARS		500

FOOTNOTES

SCS-SOILS-5
REV. 5-76
FILE CODE SOILS-12

(1)

Revised 4/5/82
JWW

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL INTERPRETATIONS RECORD

KEYING ONLY

RECORD NO.	CONTROL WORD	CONTROL NO.
	MLRA	001
	STATE	011

MLRA(S) 34, 58B | KIND OF UNIT VARIANT | UNIT NAME KISHONA
STATE WYOMING | RECORD NO. | AUTHOR(S) JWW, JFY | DATE 2-82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021
DESCR 031

TYPIC TORRIORTHENTS, FINE-LOAMY, MIXED (ICALCAREOUS), MESIC
KISHONA VARIANT SOILS ARE VERY DEEP, WELL DRAINED SOILS FORMED IN CALCAREOUS ALLUVIUM FROM MIXED SOURCES. THEY ARE ON RELICT ALLUVIAL FANS AND TERRACES. ELEVATIONS ARE 5500 TO 6000 FEET. PPT IS 5 TO 9 INCHES, MAST IS 48 TO 52 F, FFS IS 110 TO 130 DAYS. TYPICALLY, THE SURFACE LAYER IS PALE BROWN CLAY LOAM 4 INCHES THICK. THE LOWER SURFACE LAYER IS PALE BROWN CLAY LOAM 6 INCHES THICK. THE SUBSTRATUM IS PALE BROWN CLAY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 12 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE	DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041		0-4	CL	CL	A-6	0	90-100	85-100	65-75	60-70	35-40	15-20
2		4-10	SCL, CL	CL	A-6	0	90-100	85-100	55-75	50-60	30-40	15-20
3		10-30	L, CL, SICL	CL	A-6	0	85-100	75-100	70-90	65-85	30-40	15-20
4		30-60	CL, SCL	CL	A-6	0	85-100	75-100	55-75	50-65	30-40	15-20
5												
6												

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
PROP 051		28-32		0.6-2.0	0.13-0.16	7.9-9.0	2-8	MODERATE	.32	5	6	.5-1	HIGH	MODERATE
2	SAME	20-34		0.6-2.0	0.12-0.15	7.9-9.0	2-8	MODERATE	.37					
3	DEPTH	18-30		0.6-2.0	0.10-0.13	7.9-9.0	2-8	MODERATE	.32					
4	AS	15-22		0.6-2.0	0.12-0.15	7.9-9.0	2-4	MODERATE	.32					
5	ABOVE													
6														

	FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			>60			—		>60		—		B	LOW

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	0-8%: MODERATE-PERCS SLOWLY 8-12%: MODERATE-SLOPE, PERCS SLOWLY
LAGOON 081	SEWAGE LAGOONS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SLOPE, SEEPAGE 7-12%: SEVERE-SLOPE
TRENCH 091	SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-12%: MODERATE-SLOPE
SANARE 101	SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-12%: MODERATE-SLOPE
COVER 111	DAILY COVER FOR LANDFILL	0-8%: SLIGHT 8-12%: MODERATE-SLOPE

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-12%: MODERATE-SLOPE
DWEL 131	DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-12%: MODERATE-SLOPE, SHRINK-SWELL
DWEL 141	DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-12%: MODERATE-SLOPE, SHRINK-SWELL
BLDGS 151	SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SLOPE, SHRINK-SWELL 8-12%: SEVERE-SLOPE
ROADS 161	LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	0-8%: MODERATE-EXCESS SALT 8-12%: MODERATE-SLOPE, EXCESS SALT

REGIONAL INTERPRETATIONS

	FOOTNOTES	
REGION 181		

CONSTRUCTION MATERIAL

KEYING ONLY		FOOTNOTES	
FILL 191	ROADFILL		POOR-LOW STRENGTH
SAND 201	SAND		IMPROBABLE-EXCESS FINES
GRAVEL 211	GRAVEL		IMPROBABLE-EXCESS FINES
SOIL 221	TOPSOIL		0-8%: FAIR-TOO CLAYEY, EXCESS SALT 8-12%: FAIR-SLOPE, TOO CLAYEY, EXCESS SALT

WATER MANAGEMENT

KEYING ONLY		FOOTNOTES	
PONDRS 231	POND RESERVOIR AREA		0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SLOPE, SEEPAGE 8-12%: SEVERE-SLOPE
DIKES 241	EMBANKMENTS DIKES AND LEVEES		SLIGHT
PONDAQ 251	EXCAVATED PONDS AQUIFER FED		NO WATER
DRAIN 261	DRAINAGE		DEEP TO WATER
IRRIG 271	IRRIGATION		0-3%: FAVORABLE 3-12%: SLOPE
TERRAC 281	TERRACES AND DIVERSIONS		0-8%: ERODES EASILY 8-12%: SLOPE, ERODES EASILY
WATERW	GRASSED WATERWAYS		0-8%: EXCESS SALT, ERODES EASILY 8-12%: SLOPE, EXCESS SALT, ERODES EASILY

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KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: KISHONA VARIANT
UNIT MODIFIER:

RECREATIONAL DEVELOPMENT

KEYING ONLY		FOOTNOTE	KEYING ONLY		FOOTNOTE
CAMPS 301	CAMP AREAS	0-8%: MODERATE - EXCESS SALT 8-12%: MODERATE - SLOPE, EXCESS SALT	PLAYGD 321	PLAYGROUNDS	0-2%: MODERATE - EXCESS SALT 2-6%: MODERATE - SLOPE, EXCESS SALT 6-12%: SEVERE - SLOPE
PICNIC 311	PICNIC AREAS	0-8%: MODERATE - EXCESS SALT 8-12%: MODERATE - SLOPE, EXCESS SALT	PATHS 331	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

FOOTNOTE

CROPHD 451	CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
CROPS 341	0-6%	6E	3E														
2	6-10%	6E	4E														
3	10-12%	6E	6E														
4																	
5																	
6																	
7																	
8																	
9																	
351																	
2																	
3																	

WOODLAND SUITABILITY

FOOTNOTE

WOODS 361	CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
2								NONE		
3										
4										
5										
6										
7										
8										
9										
371										
2										
3										
4										
5										
6										

WINDBREAKS

FOOTNOTE

WINDBK 381	CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
2		NONE							
3									
4									
5									
6									

WILDLIFE HABITAT SUITABILITY

FOOTNOTE

WILDLF 391	CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
2	ALL	V. POOR	POOR	FAIR	—	—	FAIR	V. POOR	V. POOR	POOR	—	V. POOR	FAIR
3													
4													
5													
6													

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

FOOTNOTE

PHASE 401	PLANT 411	COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: ALL
	2	BLUEBUNCH WHEATGRASS	AGSP	30
	3	PRAIRIE JUNEGRASS	KOCR	10
	4	BLUE GRAMA	BOGR2	5
	5	THREADLEAF SEDGE	CAFI	5
	6	BIG SAGEBRUSH	ARTR2	10
	7	SANDBERG BLUEGRASS	POSE	5
	8	WESTERN WHEATGRASS	AGSM	15
	9	WILD ONION	ALLIU	5
	421	NEEDLEANDTHREAD	STCO4	10
	2			
	3			
	4			
	5			
	6			

PRODUC 431	POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
2	FAVORABLE YEARS	500
3	NORMAL YEARS	350
	UNFAVORABLE YEARS	225

FOOTNOTES

NOTES 441	SYM.	FOOTNOTES
2		
3		
4		
5		
6		
7		

CO0073

SOIL INTERPRETATIONS RECORD

MLRA(S): 49, 60, 61
REV. RD, 8-79
USTIC TORRIORTHENTS, CLAYEY, MIXED, NONACID, MESIC, SHALLOW

LOUVIERS SERIES

THE LOUVIERS SERIES CONSISTS OF SHALLOW, WELL-DRAINED SOILS. THEY FORMED IN MATERIALS WEATHERED FROM NONCALCAREOUS SHALE ON UPLANDS. IN A TYPICAL PROFILE, THE SURFACE LAYER IS CLAY, ABOUT 4 INCHES THICK. THE SUBSURFACE LAYER IS CLAY, AND OVERLIES SHALE AT ABOUT 14 INCHES. NATURAL VEGETATION IS DOMINANTLY SHORT GRASSES. AVERAGE ANNUAL PRECIPITATION IS ABOUT 17 INCHES. SLOPES ARE 0 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	C, SICL	CL, CH	A-7, A-6	0	90-100	80-100	80-100	75-95	35-55	15-30
4-14	C, SIC, SICL	CL, CH	A-7, A-6	0	90-100	80-100	80-100	75-95	35-60	20-35
14	WB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND ERODIBILITY GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	35-50		0.2-0.6	0.14-0.21	6.1-7.8	-	HIGH	.32	1	4	.5-2	HIGH	LOW
4-14	35-50		0.06-0.2	0.13-0.18	6.1-7.8	-	HIGH	.37					
14													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		8-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,HARD TO PACK 15+%: POOR-AREA RECLAIM,HARD TO PACK,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK,SHRINK-SWELL 15+%: SEVERE-DEPTH TO ROCK,SLOPE, SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH,SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15% SICL: SEVERE-THIN LAYER 15+% SICL: SEVERE-SLOPE,THIN LAYER 0-15% C: SEVERE-THIN LAYER,TOO CLAYEY 15+% C: SEVERE-SLOPE,THIN LAYER,TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM,LOW STRENGTH 25+%: POOR-AREA RECLAIM,LOW STRENGTH,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15% SICL: POOR-AREA RECLAIM 15+% SICL: POOR-AREA RECLAIM,SLOPE 0-15% C: POOR-AREA RECLAIM,TOO CLAYEY 15+% C: POOR-AREA RECLAIM,TOO CLAYEY,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SICL: PERCS SLOWLY,DEPTH TO ROCK C: SLOW INTAKE,PERCS SLOWLY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,ERODES EASILY 8+%: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY,DEPTH TO ROCK 8+%: SLOPE,ERODES EASILY,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15% SICL: SLIGHT 15-25% SICL: MODERATE-SLOPE 0-15% C: MODERATE-TOO CLAYEY 15-25% C: MODERATE-TOO CLAYEY,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	POOR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
WESTERN WHEATGRASS	AGSM	25
GREEN NEEDLEGRASS	STVI4	5
SPIKE MUHLY	MUWR	5
SIDEOATS GRAMA	BOCU	10
LITTLE BLUESTEM	ANSC2	10
BLUE GRAMA	BOGR2	10
WORMWOOD 2/	ARDR4	1
RABBITBRUSH 2/	CHRYS9	1
NEEDLEANDTHREAD	STCO4	10
WINTERFAT	EULA5	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		800
NORMAL YEARS		700
UNFAVORABLE YEARS		500

FOOTNOTES

1 WHERE BEDROCK IS SHALE, IT CAN BE USED IF PROPERLY SEALED.

2 NOT USUALLY UTILIZED BY CATTLE OR SHEEP.

MLRA(S): 32, 34
JFY, 4-75
BORCLLIC HAPLARGIDS, LOAMY-SKELETAL, MIXED

LUPINTO SERIES

THE LUPINTO SERIES ARE WELL-DRAINED SCILS FORMING IN ALLUVIUM ON GENTLY SLOPING TO STEEP ALLUVIAL FANS AND TERRACES. SLOPES ARE 2 TO 40 PERCENT. ELEVATION IS 5000 TO 6000 FEET. PPT IS ABOUT 14 INCHES. MAST IS 42 TO 47 F. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY LOAM, ABOUT 4 INCHES THICK. THE SUBSOIL IS BROWN, GRAVELLY CLAY LOAM, ABOUT 5 IN. THICK. THE SUBSTRATUM IS LIGHT GRAY GRAVELLY LOAM TO 60 INCHES OR MORE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USCA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	L	ML	A-4	0-5	85-95	85-95	75-85	55-65	15-25	NP-5
4-9	GR-CL	GC, CL	A-6, A-7	0-5	50-75	50-75	45-70	35-55	35-45	15-20
9-60	GR-L, GRV-L	GM	A-1, A-2	0-5	30-60	30-55	25-45	20-35	15-30	NP-5

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-4	0.6-2.0	0.16-0.18	7.4-7.8	<2	LOW	HIGH	MODERATE	.32	5	6
4-9	0.6-2.0	0.10-0.15	7.4-8.4	<2	MODERATE	HIGH	MODERATE	.28		
9-60	6.0-20	0.09-0.12	7.9-9.0	<4	LOW	HIGH	HIGH	.32		

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES (A)

SEPTIC TANK ABSORPTION FIELDS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	2-7%: SEVERE-SEEPAGE 7+%: SEVERE-SLOPE,SEEPAGE
SANITARY LANDFILL (TRENCH)	2-25%: SEVERE-SEEPAGE 25+%: SEVERE-SLOPE,SEEPAGE
SANITARY LANDFILL (AREA)	2-15%: SEVERE-SEEPAGE 15+%: SEVERE-SLOPE,SEEPAGE
DAILY COVER FOR LANDFILL	2-15%: POOR-SMALL STONES 15+%: POOR-SLOPE,SMALL STONES

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	2-15%: SEVERE-SMALL STONES,CUTBANKS CAVE 15+%: SEVERE-SLOPE,SMALL STONES, CUTBANKS CAVE
DWELLINGS WITHOUT BASEMENTS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH EASEMENTS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	2-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	2-15%: FAIR-AREA RECLAIM 15-25%: FAIR-SLOPE,AREA RECLAIM 25+%: POOR-SLOPE
SAND	UNSUITED
GRAVEL	POOR-EXCESS FINES
TOPSOIL	2-15%: POOR-THIN LAYER 15+%: POOR-SLOPE,THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	SEEPAGE,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	2-3%: CUTBANKS CAVE 3+%: SLOPE,CUTBANKS CAVE
IRRIGATION	SLOPE,DROUGHTY
TERRACES AND DIVERSIONS	2-10%: PIPING 10+%: SLOPE
GRASSED WATERWAYS	2-10%: DROUGHTY 10+%: SLOPE,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	2-6%: MODERATE-SLOPE, SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	2-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		GRASS HAY (TONS)		PASTURE (AUM)							
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
2-6%	6E	3E	-	3.0	-	3.0	-	4						
6-10%	6E	4E	-	2.5	-	2.5	-	4						
10-15%	6E	6E	-	2.0	-	2.0	-	3						
15+%	6E	-	-	-	-	-	-	-						

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
2-6% IRR	FAIR	FAIR	GOOD	-	-	GOOD	POOR	V. POOR	FAIR	-	V. POOR	-
6-15% IRR	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	10
BLUEBUNCH WHEATGRASS	AGSP	35
INDIAN RICEGRASS	ORHY	10
NEEDLEANDTHREAD	STCO4	10
PRAIRIE JUNEGRASS	KCCR	5
WESTERN WHEATGRASS	AGSM	15
OTHER PERENNIAL GRASSES	PFGG	10
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1100
NORMAL YEARS		800
UNFAVORABLE YEARS		500

FOOTNOTES

A EXCESSIVE PERMEABILITY RATE MAY CAUSE POLLUTION OF GROUND WATER.

MLRA(S): 67, 69, 49, 60, 59, 58, 61, 48 MIDWAY SERIES
REV. BM, 10-80
USTIC TORRIORTHENTS, CLAYEY, MONTMORILLONITIC (CALCAREOUS), MESIC, SHALLOW

THE MIDWAY SERIES CONSISTS OF SHALLOW WELL DRAINED SOILS FORMED IN RESIDUUM FROM GRAY CALCAREOUS SHALES. TYPICALLY THE SURFACE LAYER IS CLAY ABOUT 3 INCHES THICK. THE UNDERLYING LAYERS ARE CALCAREOUS CLAY AND REST ON SHALE AT 12 INCHES. NATURAL VEGETATION IS DOMINANTLY GRASS WITH A SCATTERING OF SHRUBS MAP IS 10 TO 16 INCHES AND FFS IS 100 TO 180 DAYS. SLOPES RANGE FROM 0 TO 75 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	C, SIC	CL	A-6, A-7	0	75-100	75-100	70-100	70-95	35-50	20-30
0-3	CL, SICL	CL	A-6	0	75-100	75-100	70-100	70-95	30-40	10-20
0-3	GR-CL	CL, GC	A-6	0-5	50-75	50-75	50-75	45-70	30-40	10-20
3-12	C, CL, SICL	CL, CH	A-6, A-7	0	95-100	95-100	90-100	70-95	35-60	20-35
12	WB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-3	40-60		0.06-0.2	0.14-0.18	6.6-8.4	2-4	HIGH	.43	1	4	.5-2	HIGH	LOW
0-3	30-40		0.2-0.6	0.14-0.18	6.6-8.4	2-4	MODERATE	.43	1	4L	.5-2		
0-3	30-40		0.2-0.6	0.14-0.18	6.6-8.4	2-4	MODERATE	.28	1	6	.5-2		
3-12	35-45		0.06-0.2	0.14-0.18	7.9-9.0	2-8	HIGH	.43					
12													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		6-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,HARD TO PACK 15+%: POOR-AREA RECLAIM,HARD TO PACK,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK,SHRINK-SWELL 15+%:SEVERE-DEPTH TO ROCK,SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	0-15%:SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15% CL,SICL,GR-CL: SEVERE-THIN LAYER 15+% CL,SICL,GR-CL: SEVERE-SLOPE,THIN LAYER 0-15% C,SIC: SEVERE-THIN LAYER,TOO CLAYEY 15+%C,SIC:SEVERE-SLOPE,THIN LAYER,TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM,LOW STRENGTH 25+%: POOR-AREA RECLAIM,LOW STRENGTH,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15% CL,SICL,GR-CL: POOR-AREA RECLAIM 15+% CL,SICL,GR-CL: POOR-AREA RECLAIM,SLOPE 0-15% C,SICL: POOR-AREA RECLAIM,TOO CLAYEY 15+%C,SIC:POOR-AREA RECLAIM,TOO CLAYEY,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	MODERATE-HARD TO PACK
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	CL,SICL,GR-CL: PERCS SLOWLY,DEPTH TO ROCK C,SIC:SLOW INTAKE,PERCS SLOWLY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,ERODES EASILY 8+%: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY,DEPTH TO ROCK 8+%: SLOPE,ERODES EASILY,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-DEPTH TO ROCK,SLOPE
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
WARM	7E															
COOL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	–	–	FAIR	V. POOR	V. POOR	POOR	–	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE				
		DRY	HIGH PE	LOW PE	MAP8-13	MAP13-16
ALKALI SACATON	SPAI	50	30	40	–	–
BLUE GRAMA	BOGR2	20	25	20	40	10
GALLETA	HIJA	15	–	20	–	–
WESTERN WHEATGRASS	AGSM	5	10	5	20	30
SIDEOATS GRAMA	BOCU	5	15	–	10	15
GREEN NEEDLEGRASS	STVI4	–	2	–	–	15
INDIAN RICEGRASS	ORHY	–	–	5	–	–
BUFFALOGRASS	BUDA	2	3	1	5	5
FOURWING SALTBUSH	ATCA2	2	5	2	–	–
WINTERFAT	EULA5	1	5	5	5	–
PRAIRIE JUNEGRASS	KOCR					5
LITTLE BLUESTEM	ANSC2					5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
FAVORABLE YEARS		700	900	650	900	1600
NORMAL YEARS		400	550	350	700	1400
UNFAVORABLE YEARS		300	300	200	450	950

FOOTNOTES

SOIL INTERPRETATIONS RECORD

MLRA(S): 43
REV. JFY. 7-79
TYPIC CRYUMEREPTS, LOAMY-SKELETAL, MIXED

MCRAN SERIES

MCRAN SERIES ARE WELL-DRAINED SOILS FORMING IN TRANSPORTED MATERIALS IN MONTAINS. ELEVATION IS 7,000 TO 11,000 FEET. PPT IS 30 TO 60 INCHES. MAST IS 32 TO 36 F. MSST IS 50 TO 54 F. TYPICALLY, THE SURFACE LAYER IS BROWN GRAVELLY SANDY LOAM ABOUT 6 INCHES THICK. THE SUBSOIL IS BROWN VERY GRAVELLY SANDY LOAM ABOUT 9 INCHES THICK. THE SUBSTRATUM IS LIGHT BROWN VERY GRAVELLY SANDY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 70 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	STV-SL	SM	A-2	30-50	70-75	70-75	45-55	25-35	-	NP
6-15	STV-SL	SM	A-1, A-2	40-60	70-80	70-80	40-50	20-30	-	NP
15-60	STV-SL	SM	A-1, A-2	40-60	70-80	70-80	40-50	20-30	-	NP

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	5-10		2.0-6.0	0.05-0.07	5.6-6.0	-	LOW	.20	5	3	2-4	MODERATE	MODERATE
6-15	5-10		2.0-6.0	0.02-0.05	5.1-6.5	-	LOW	.15					
15-60	5-10		2.0-6.0	0.02-0.05	5.6-6.5	-	LOW	.15					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE,LARGE STONES 7+%: SEVERE-SEEPAGE,SLOPE,LARGE STONES
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-SEEPAGE,LARGE STONES 15+%: SEVERE-SEEPAGE,SLOPE,LARGE STONES
SANITARY LANDFILL (AREA)	0-15%: SEVERE-SEEPAGE 15+%: SEVERE-SEEPAGE,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-LARGE STONES 15+%: POOR-LARGE STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-LARGE STONES 25+%: POOR-LARGE STONES,SLOPE
SAND	IMPROBABLE-EXCESS FINES,LARGE STONES
GRAVEL	IMPROBABLE-EXCESS FINES,LARGE STONES
TOPSOIL	0-15%: POOR-LARGE STONES,AREA RECLAIM 15+%: POOR-LARGE STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-SEEPAGE 8+%: SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,SOIL BLOWING
TERRACES AND DIVERSIONS	0-8%: LARGE STONES,SOIL BLOWING 8+%: SLOPE,LARGE STONES,SOIL BLOWING
GRASSED WATERWAYS	0-8%: LARGE STONES,DROUGHTY 8+%: LARGE STONES,SLOPE,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-LARGE STONES 15+%: SEVERE-LARGE STONES,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-LARGE STONES 8+%: SEVERE-SLOPE,LARGE STONES
LOCAL ROADS AND STREETS	0-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-LARGE STONES,DROUGHTY 15+%: SEVERE-LARGE STONES,DROUGHTY,SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: MODERATE-LARGE STONES,SMALL STONES 8-15%: MODERATE-SLOPE,LARGE STONES, SMALL STONES 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-6%: SEVERE-LARGE STONES,SMALL STONES 6+%: SEVERE-LARGE STONES,SLOPE,SMALL STONES
PICNIC AREAS	0-8%: MODERATE-LARGE STONES,SMALL STONES 8-15%: MODERATE-SLOPE,LARGE STONES, SMALL STONES 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15%: MODERATE-LARGE STONES 15-25%: MODERATE-LARGE STONES,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-30%	6S															
30-70%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-6%	POOR	POOR	GOOD	-	-	GOOD	POOR	V. POOR	FAIR	-	V. POOR	GOOD
6-70%	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ANTELOPE BITTERBRUSH	PUTR2	10
BIG SAGEBRUSH	ARTR2	5
BLUEBUNCH WHEATGRASS	AGSP	25
COLUMBIA NEEDLEGRASS	STCO3	5
IDAHO FESCUE	FEID	20
LETTERMAN NEEDLEGRASS	STLE4	5
SNOWBERRY	SYMPH	5
SPIKE-FESCUE	HEKI	10
THICKSPIKE WHEATGRASS	AGDA	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		2500
NORMAL YEARS		2000
UNFAVORABLE YEARS		1500

FOOTNOTES

WY0357

SOIL INTERPRETATIONS RECORD

MLRA(S): 34
REV. JFY,FS. 4-77
TYPIC CRYAQUOLLS, FINE-LOAMY, MIXED (CALCAREOUS)

MOSLANDER SERIES

THE MOSLANDER SERIES ARE POORLY DRAINED SOILS FORMED IN ALLUVIUM ON FLOOD PLAINS OR DRAINAGE WAYS. ELEVATION IS 6,600 TO 7,200 FEET. PPT IS ABOUT 14 INCHES. MAST IS ABOUT 41 F., AND THE FFS IS 70 TO 90 DAYS. TYPICALLY, THE SURFACE LAYER IS GRAYISH-BROWN MOTTLED LOAM ABOUT 9 INCHES THICK. THE UNDERLYING LAYER IS GRAYISH-BROWN MOTTLED, STRATIFIED LOAM TO 60 INCHES. SLOPES ARE 0 TO 3 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-9	L	CL-ML, ML	A-4	0	75-100	75-100	65-90	50-75	25-35	5-10
9-60	SR-SL-C	CL-ML, ML	A-4	0	75-100	75-100	65-90	50-75	25-35	5-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND ERODI. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-9			0.6-2.0	0.16-0.18	7.4-9.0	<2	LOW	.28	5	8		HIGH	MODERATE
9-60			0.2-2.0	0.16-0.18	7.9-9.0	<2	LOW	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
FREQUENT	BRIEF	MAY-JUL	0-1.5	APPARENT	JAN-DEC	-		>60		-		C	HIGH

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-WETNESS,FLOODS
SEWAGE LAGOON AREAS	SEVERE-WETNESS,FLOODS
SANITARY LANDFILL (TRENCH)	SEVERE-WETNESS,FLOODS
SANITARY LANDFILL (AREA)	SEVERE-WETNESS,FLOODS
DAILY COVER FOR LANDFILL	POOR-WETNESS

CONSTRUCTION MATERIAL

ROADFILL	POOR-WETNESS,FROST ACTION
SAND	UNSUITED-EXCESS FINES
GRAVEL	UNSUITED-EXCESS FINES
TOPSOIL	POOR-WETNESS

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: FAVORABLE 2+%: SLOPE
EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH,PIPING
EXCAVATED PONDS AQUIFER FED	FAVORABLE
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	WETNESS
GRASSED WATERWAYS	WETNESS

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-WETNESS,FLOODS
DWELLINGS WITHOUT BASEMENTS	SEVERE-WETNESS,FLOODS
DWELLINGS WITH BASEMENTS	SEVERE-WETNESS,FLOODS
SMALL COMMERCIAL BUILDINGS	SEVERE-WETNESS,FLOODS
LOCAL ROADS AND STREETS	SEVERE-WETNESS,FLOODS,FROST ACTION
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-WETNESS,FLOODS	PLAYGROUNDS	SEVERE-WETNESS,FLOODS
PICNIC AREAS	SEVERE-WETNESS	PATHS AND TRAILS	SEVERE-WETNESS

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	5W															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-1%	V. POOR	POOR	GOOD	-	-	GOOD	GOOD	GOOD	POOR	-	GOOD	GOOD
1-2%	V. POOR	POOR	GOOD	-	-	GOOD	GOOD	FAIR	POOR	-	FAIR	GOOD
2-3%	V. POOR	POOR	GOOD	-	-	GOOD	GOOD	POOR	POOR	-	FAIR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BALTIC RUSH 1/	JUBA	5
INLAND SEDGE	CAIN11	10
NEBRASKA SEDGE	CANE2	30
NORTHERN REEDGRASS	CAIN	15
ROSE	ROSA4	5
TALL MANNAGRASS	GLEL	5
TUFTED HAIRGRASS	DECA5	10
WILLOW 1/	SALIX	10
OTHER PERENNIAL GRASSES	PEGG	5
OTHER PERENNIAL FORBS	FFFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		6,000
NORMAL YEARS		5,000
UNFAVORABLE YEARS		4,000

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

WY0152

SOIL INTERPRETATIONS RECORD

MLRA(S): 34, 48
REV. JFY, 11-80

MOYERSON SERIES

USTIC TORRIORTHENTS, CLAYEY, MONTMORILLONITIC (CALCAREOUS), FRIGID, SHALLOW

MOYERSON SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SHALE ON RIDGES AND HILLSIDES. PERCIPITATION IS 10 TO 12 INCHES. MAST IS 42 TO 44F. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY SILTY CLAY, ABOUT 5 INCHES THICK. THE SUBSTRATUM IS LIGHT BROWNISH-GRAY SILTY CLAY, UNDERLAIN BY CLAY SHALE AT ABOUT 18 INCHES. SLOPES RANGE FROM 0 TO 65 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-5	SIC, C	CL, CH	A-7	0-5	95-100	95-100	85-95	80-90	45-65	20-35
0-5	SL, L	CL-ML, SM-SC	A-4	5-20	90-100	90-100	65-95	40-75	20-30	5-10
0-5	ST-CL	CL	A-6	10-25	90-100	85-100	70-90	60-80	35-40	15-20
5-18	SIC, C, CL	CL, CH	A-7	0-15	95-100	95-100	85-95	80-90	45-65	20-35
18	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-5	40-50		0.06-0.2	0.14-0.17	7.4-9.0	2-4	HIGH	.28	1	4	1-2	HIGH	LOW
0-5	5-20		0.6-2.0	0.13-0.17	7.4-9.0	2-4	LOW	.28	1	4L	1-2		
0-5	27-35		0.2-0.6	0.14-0.16	7.4-9.0	2-4	MODERATE	.24	1	5	1-2		
5-18	35-50		0.06-0.2	0.14-0.17	7.9-9.0	2-4	HIGH	.28					
18													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	SOFT	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,HARD TO PACK 15+%: POOR-AREA RECLAIM,HARD TO PACK,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK,SHRINK-SWELL 15+%:SEVERE-DEPTH TO ROCK,SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH,SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15% SL,L,ST-CL: SEVERE-THIN LAYER 15+% SL,L,ST-CL: SEVERE-SLOPE,THIN LAYER 0-15% SIC,C: SEVERE-THIN LAYER,TOO CLAYEY 15+%SIC,C:SEVERE-SLOPE,THIN LAYER,TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM,LOW STRENGTH 25+%: POOR-AREA RECLAIM,LOW STRENGTH,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15% SIC,C,SL,L: POOR-AREA RECLAIM 15+% SIC,C,SL,L: POOR-AREA RECLAIM,SLOPE 0-15% ST: POOR-AREA RECLAIM,LARGE STONES 15+%ST: POOR-AREA RECLAIM,LARGE STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SL,L,ST-CL: PERCS SLOWLY,DEPTH TO ROCK SIC,C:SLOW INTAKE,PERCS SLOWLY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	0-8% SIC,C: DEPTH TO ROCK 8+% SIC,C: SLOPE,DEPTH TO ROCK 0-8% SL,L,ST: LARGE STONES,DEPTH TO ROCK 8+%SL,L,ST: SLOPE,LARGE STONES,DEPTH TO ROCK
GRASSED WATERWAYS	0-8% SIC,C: DEPTH TO ROCK 8+% SIC,C: SLOPE,DEPTH TO ROCK 0-8% SL,L,ST: LARGE STONES,DEPTH TO ROCK 8+%SL,L,ST: LARGE STONES,SLOPE,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15% SL,L,ST-CL: SLIGHT 15-25% SL,L,ST-CL: MODERATE-SLOPE 0-15% SIC,C: MODERATE-TOO CLAYEY 15-25% SIC,C: MODERATE-TOO CLAYEY,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	POOR	-	-	POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ALKALI SACATON	SPAI	5
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
GARDNER SALTBUSH	ATNU2	20
GREEN MOLLY SUMMERCYPRESS	KOAM	5
INDIAN RICEGRASS	ORHY	10
THICKSPIKE WHEATGRASS	AGDA	30
WINTERFAT	EULAS	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		400
NORMAL YEARS		300
UNFAVORABLE YEARS		200

FOOTNOTES

WY0268

SOIL INTERPRETATIONS RECORD

MLRA(S): 32
REV. JFY,FS, 4-77
TYPIC NATRARGICS, CLAYEY, MONTMORILLONITIC, MESIC, SHALLOW

MUDRAY SERIES

THE MUDRAY SERIES ARE WELL TO MODERATELY WELL-DRAINED SOILS FORMED IN RESIDUUM FROM SHALE ON UPLANDS. SLOPES ARE 0 TO 15 PERCENT. ELEVATION IS 5,000 TO 5,500 FEET. PPT IS ABOUT 7 INCHES, MAST IS ABOUT 51 F., AND THE FFS IS 120 TO 140 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWN SANDY LOAM, ABOUT 2 INCHES THICK. THE SUBSOIL IS REDDISH-BROWN CLAY, ABOUT 10 INCHES THICK. THE SUBSTRATUM IS REDDISH-BROWN SANDY CLAY LOAM, ABOUT 5 INCHES THICK, AND IS UNDERLAIN BY SHALE AT A DEPTH OF 17 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-2	SL	SM	A-2	0	75-100	75-100	50-70	25-35	-	NP
2-12	C	CL, CH	A-7	0	75-100	75-100	70-100	60-90	45-55	20-30
12-17	SCL	SC	A-6	0	75-100	75-100	65-90	40-50	30-40	15-20
17	WE									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	ERSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-2			2.0-6.0	0.11-0.13	>7.8	<4	LOW	.32	1	3		HIGH	HIGH
2-12			0.06-0.2	0.14-0.16	>9.0	<4	HIGH	.43					
12-17			0.06-0.2	0.14-0.16	>9.0	<4	MODERATE	.37					
17													

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK,PERCS SLOWLY
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8+%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-THIN LAYER,AREA RECLAIM

CONSTRUCTION MATERIAL

ROADFILL	POOR-THIN LAYER,SHRINK-SWELL,LOW STRENGTH
SAND	UNSUITED-EXCESS FINES
GRAVEL	UNSUITED-EXCESS FINES
TOPSOIL	POOR-EXCESS SODIUM,AREA RECLAIM,TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	0-2%: DEPTH TO ROCK 2+%: SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,SHRINK-SWELL,LOW STRENGTH
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	0-3%: DEPTH TO ROCK,PERCS SLOWLY 3+%: SLOPE,DEPTH TO ROCK,PERCS SLOWLY
IRRIGATION	0-2%: EXCESS SODIUM,ROOTING DEPTH, PERCS SLOWLY 2+%: SLOPE,EXCESS SODIUM,ROOTING DEPTH
TERRACES AND DIVERSIONS	0-10%: DEPTH TO ROCK 10+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-10%: EXCESS SODIUM,ROOTING DEPTH, ERODES EASILY 10+%: SLOPE,EXCESS SODIUM,ROOTING DEPTH

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK 8+%: MODERATE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK 8+%: MODERATE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-DEPTH TO ROCK 4-8%: MODERATE-SLOPE,DEPTH TO ROCK 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	SEVERE-SHRINK-SWELL,LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-DUSTY	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK,DUSTY 6+%: SEVERE-SLOPE,DEPTH TO ROCK,DUSTY
PICNIC AREAS	SEVERE-DUSTY	PATHS AND TRAILS	SEVERE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	7S	-														
6+%	7E	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERBS.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: CEREAL WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	V. POOR	-	-	POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIRDFOOT SAGEBRUSH 1/	ARPE6	40
BOTTLEBRUSH SQUIRRELTAIL	SIHY	10
BUD SAGEBRUSH	ARSP5	10
GARDNER SALTBUSH	ATNU2	5
INDIAN RICEGRASS	ORHY	5
SANDBERG BLUEGRASS	POSE	5
WESTERN WHEATGRASS	AGSM	10
WINTERFAT	ELLA3	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		300
NORMAL YEARS		200
UNFAVORABLE YEARS		100

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

4T0347 — SOIL INTERPRETATIONS RECORD

4LRA(S): 58A, 52, 60A, 60B — NELDORE SERI
REV. WLB, 5-81
JSTIC TORRIORTHENTS, CLAYEY, MONTMORILLONITIC, NONACID, FRIGID, SHALLOW

THE NELDORE SERIES CONSISTS OF SHALLOW, WELL DRAINED SOILS FORMED IN CLAYEY RESIDUUM OF SHALE, OR IN CLAYEY ALLUVIUM OVER THE SHALE. TYPICALLY THESE SOILS HAVE A CLAY SURFACE LAYER 3 INCHES THICK, AND CLAY AND SHALY CLAY UNDERLYING MATERIAL. SHALE IS AT 12 TO 20 INCHES. THEY ARE ON UPLANDS IN A 13 TO 14 INCH PRECIPITATION ZONE. THE VEGETATION IS MAINLY MID AND SHORT GRASSES. SOME AREAS ARE FORESTED WITH DOUGLAS-FIR AND PONDEROSA PINE. THE FROST FREE SEASON IS 11 TO 135 DAYS. SLOPES RANGE FROM 2 TO 60 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	C, SIC	CL, CH	A-7	0-10	95-100	90-100	75-100	70-95	40-55	20-30
0-3	CL	CL	A-6, A-7	0-10	95-100	90-100	65-95	60-85	35-45	15-20
3-12	C, SIC	CL, CH	A-7	0	90-100	85-100	70-95	65-90	40-50	20-40
12-18	C, SIC	CL, CH	A-7	0-5	85-100	80-100	65-95	60-90	40-60	20-40
18	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND ERODIBILITY GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-3	40-50	-	0.06-0.2	0.14-0.18	5.6-7.8	<2	HIGH	.32	1	4	1-5	HIGH	LOW
0-3	35-40	-	0.2-0.6	0.14-0.18	5.6-7.8	<2	MODERATE	.37	1	4	1-3		
3-12	40-60	-	0.06-0.2	0.12-0.16	5.6-7.8	<4	HIGH	.32					
12-18	40-60	-	0.06-0.2	0.12-0.16	5.6-7.8	<4	HIGH	.32					
18													

FLOODING FREQUENCY	FLOODING DURATION	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE		>6.0			-		10-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	2-8%: SEVERE-DEPTH TO ROCK, PERCS SLOWLY 8-15%: SEVERE-SLIPPAGE, DEPTH TO ROCK, PERCS SLOWLY 15+%: SEVERE-SLIPPAGE, DEPTH TO ROCK, SLOPE
SEWAGE LAGOON AREAS	2-7%: SEVERE-SEEPAGE 7+%: SEVERE-SLIPPAGE, SEEPAGE, SLOPE
SANITARY LANDFILL (TRENCH)	2-8%: SLIGHT 8-15%: SEVERE-SLIPPAGE 15+%: SEVERE-SLIPPAGE, SLOPE
SANITARY LANDFILL (AREA)	2-8%: SLIGHT 8-15%: SEVERE-SLIPPAGE 15+%: SEVERE-SLIPPAGE, SLOPE
DAILY COVER FOR LANDFILL	2-15%: POOR-AREA RECLAIM, HARD TO PACK 15+%: POOR-AREA RECLAIM, HARD TO PACK, SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	2-8%: SLIGHT 8-15%: SEVERE-SLIPPAGE 15+%: SEVERE-SLIPPAGE, SLOPE
DWELLINGS WITHOUT BASEMENTS	2-8%: SEVERE-SHRINK-SWELL 8-15%: SEVERE-SLIPPAGE, SHRINK-SWELL 15+%: SEVERE-SLIPPAGE, SHRINK-SWELL, SLOPE
DWELLINGS WITH BASEMENTS	2-8%: SEVERE-DEPTH TO ROCK, SHRINK-SWELL 8-15%: SEVERE-SLIPPAGE, DEPTH TO ROCK, SHRINK-SWELL 15+%: SEVERE-SLIPPAGE, DEPTH TO ROCK, SLOPE
SMALL COMMERCIAL BUILDINGS	2-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SLIPPAGE, SHRINK-SWELL, SLOPE
LOCAL ROADS AND STREETS	2-8%: SEVERE-LOW STRENGTH, SHRINK-SWELL 8-15%: SEVERE-SLIPPAGE, LOW STRENGTH, SHRINK-SWELL 15+%: SEVERE-SLIPPAGE, LOW STRENGTH, SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	2-15% CL: SEVERE-THIN LAYER 15+% CL: SEVERE-SLOPE, THIN LAYER 2-15% C,SIC: SEVERE-THIN LAYER, TOO CLAYEY 15+%C,SIC: SEVERE-SLOPE, THIN LAYER, TOO CLAYEY

CONSTRUCTION MATERIAL

ROADFILL	2-25%: POOR-AREA RECLAIM, LOW STRENGTH 25+%: POOR-AREA RECLAIM, LOW STRENGTH, SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	2-15%: POOR-AREA RECLAIM, TOO CLAYEY 15+%: POOR-AREA RECLAIM, TOO CLAYEY, SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	2-8%: SEVERE-SEEPAGE 8+%: SEVERE-SLIPPAGE, SEEPAGE, SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	CL: PERCS SLOWLY, DEPTH TO ROCK C,SIC: SLOW INTAKE, PERCS SLOWLY, DEPTH TO ROCK
TERRACES AND DIVERSIONS	2-8% C,SIC: DEPTH TO ROCK 8+% C,SIC: SLOPE, DEPTH TO ROCK 2-8% CL: DEPTH TO ROCK, ERODES EASILY 8+% CL: SLOPE, DEPTH TO ROCK, ERODES EASILY
GRASSED WATERWAYS	2-8% C,SIC: DEPTH TO ROCK 8+% C,SIC: SLOPE, DEPTH TO ROCK 2-8% CL: ERODES EASILY, DEPTH TO ROCK 8+% CL: SLOPE, ERODES EASILY, DEPTH TO ROCK

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	2-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	2-15% C,SIC: SLIGHT 15-25% C,SIC: MODERATE-SLOPE 25+% C,SIC: SEVERE-SLOPE 2-25% CL: SEVERE-ERODES EASILY 25+% CL: SEVERE-SLOPE,ERODES EASILY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
2-8%	6S														
8-25%	6E														
25+%	7E														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORTALITY	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
2-15%	7D	SLIGHT	SLIGHT	SEVERE	MODERATE	SEVERE	PONDEROSA PINE	40	DOUGLAS-FIR
15-25%	7D	MODERATE	MODERATE	SEVERE	MODERATE	SEVERE	DOUGLAS-FIR	30	PONDEROSA PINE
25-60%	7D	SEVERE	SEVERE	SEVERE	MODERATE	SEVERE			

WINDBREAKS

CLASS-DETERMING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
2-15%	SIBERIAN PEASHRUB	6	WESTERN SANDCHERRY	4	SIBERIAN ELM	17	ROCKY MT. JUNIPER	10
	SKUNKBUSH SUMAC	4	RUSSIAN-OLIVE	14	PONDEROSA PINE	13		
15+%								

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	POTENTIAL AS HABITAT FOR: SHALLOW WATER	OPENLD WILDLE	WOODLD WILDLE	WETLAND WILDLE	RANGELD WILDLE
2-8%	POOR	POOR	POOR	-	POOR	POOR	POOR	V. POOR	POOR	-	V. POOR	POOR
8-25%	POOR	POOR	POOR	-	POOR	POOR	V. POOR	V. POOR	POOR	-	V. POOR	POOR
25+%	V. POOR	POOR	POOR	-	POOR	POOR	V. POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (A)

COMMON PLANT NAME	PLANT SYMBOL (NRCS)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: RANGELAND	WOODLAND
WESTERN WHEATGRASS	AGSM	30	1
PLAINS REEDGRASS	CAMO	20	-
PLAINS MUHLY	MUCU3	10	-
GREEN NEEDLEGRASS	STVI4	10	3
PRAIRIE SANDREED	CALO	10	4
BLUEBUNCH WHEATGRASS	AGSP	-	5
CREEPING JUNIPER	JUHO2	-	6
COMMON CHOKECHERRY	PRVI	-	7
ROCKY MOUNTAIN JUNIPER	JUSC2	-	2
OTHER PERENNIAL GRASSES	PGGG	5	-
OTHER PERENNIAL FORBS	PPFF	5	-
OTHER SHRUBS	SSSS	5	-
POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS		700	
NORMAL YEARS		500	
UNFAVORABLE YEARS		300	

FOOTNOTES

A NUMBERS LISTED UNDER PERCENTAGE COMPOSITION FOR FORESTED PHASE REFLECTS THE ORDER OF DOMINANCE.

SOIL INTERPRETATIONS RECORD

KEYING ONLY

RECORD NO.	CONTROL WORD	NO.
	MLRA	001
	STATE	011

MLRA(S) 34 58B | KIND OF UNIT VARIANT | UNIT NAME NELDORE

STATE WYOMING | RECORD NO. | AUTHOR(S) AMP, JPY | DATE 4-82 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021: U.S.T.C. TORRIORTHENTS, CLAYEY-SKELETAL, MONTMORILLONITIC, NONACID, FRIGID, SHALLOW

DESCR 031: NELDORE VARIANT SOILS ARE SHALLOW AND WELL DRAINED. THEY FORMED IN COLLUVIUM OR RESIDUUM DERIVED FROM SHALE. THEY ARE ON ESCARPMENTS AND DIPSLOPES OF TILTED SHALE BEDS. PPT IS 10 TO 14 INCHES. MAST IS 43 TO 46 F. FFS IS 90 TO 110 DAYS. ELEVATIONS ARE 6000 TO 7000 FEET. TYPICALLY, THE SURFACE LAYER IS BROWN VERY CHANNERY CLAY LOAM ABOUT 5 INCHES THICK. THE SUBSTRATUM IS BROWN EXTREMELY CHANNERY CLAY ABOUT 7 INCHES THICK OVER SLIGHTLY HARD SHALE. SLOPES RANGE FROM 3 TO 60 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041	0-5	CNV-CL, CN-C	GC, SC	A-6, A-7	5-10	65-95	50-80	45-65	35-50	35-50	15-25
2	5-12	CNV-C, CNX-C	GC	A-2	15-25	50-70	30-45	30-40	25-35	45-60	20-30
3	12	WB									
4											
5											
6											

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
PROP 051		30-45		0.06-0.6	0.08-0.12	7.4-7.8	<2	HIGH	.15	1	8	1-2	HIGH	LOW
2	SAME DEPTH AS ABOVE	40-55		0.06-0.6	0.02-0.06	7.4-8.4	<2	HIGH	.05					
3														
4														
5														
6														

	FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INITIAL (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	NONE			>6.0			—		10-20	HARD	—		D	LOW

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	3-15%: SEVERE-DEPTH TO ROCK, PERCS SLOWLY 15-60%: SEVERE-SLOPE, DEPTH TO ROCK, PERCS SLOWLY
LAGOON 081	SEWAGE LAGOONS	3-7%: SEVERE-DEPTH TO ROCK 7-60%: SEVERE-SLOPE, DEPTH TO ROCK
TRENCH 091	SANITARY LANDFILL (TRENCH)	3-15%: SEVERE-DEPTH TO ROCK 15-60%: SEVERE-SLOPE, DEPTH TO ROCK
SANARE 101	SANITARY LANDFILL (AREA)	3-15%: SEVERE-DEPTH TO ROCK 15-60%: SEVERE-SLOPE, DEPTH TO ROCK
COVER 111	DAILY COVER FOR LANDFILL	3-15%: SEVERE-AREA RECLAIM, SMALL STONES, THIN LAYER 15-60%: SEVERE-SLOPE, AREA RECLAIM, SMALL STONES

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	3-15%: SEVERE-DEPTH TO ROCK 15-60%: SEVERE-SLOPE, DEPTH TO ROCK
DWEL 131	DWELLINGS WITHOUT BASEMENTS	3-15%: SEVERE-SHRINK-SWELL, DEPTH TO ROCK 15-60%: SEVERE-SLOPE, SHRINK-SWELL, DEPTH TO ROCK
DWEL 141	DWELLINGS WITH BASEMENTS	3-15%: SEVERE-SHRINK-SWELL, DEPTH TO ROCK 15-60%: SEVERE-SLOPE, SHRINK-SWELL, DEPTH TO ROCK
BLDGS 151	SMALL COMMERCIAL BUILDINGS	3-8%: SEVERE-SHRINK-SWELL, DEPTH TO ROCK 8-60%: SEVERE-SLOPE, SHRINK-SWELL, DEPTH TO ROCK
ROADS 161	LOCAL ROADS AND STREETS	3-15%: SEVERE-DEPTH TO ROCK 15-60%: SEVERE-SLOPE, DEPTH TO ROCK
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	3-15%: SEVERE-SMALL STONES, THIN LAYER 15-60%: SEVERE-SLOPE, SMALL STONES, THIN LAYER

REGIONAL INTERPRETATIONS

	FOOTNOTES	
REGION 181		

KEYING ONLY

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CONSTRUCTION MATERIAL

FOOTNOTES	
ROADFILL	3-25%: POOR-LOW STRENGTH, THIN LAYER, SHRINK-SWELL 25-60%: POOR-SLOPE, LOW STRENGTH, SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	3-15%: POOR-AREA RECLAIM, SMALL STONES, TOO CLAYEY 15-60%: POOR-SLOPE, SMALL STONES, TOO CLAYEY

WATER MANAGEMENT

FOOTNOTES	
POND RESERVOIR AREA	3-8%: SEVERE-DEPTH TO ROCK 8-60%: SEVERE-SLOPE, DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SLOPE, DROUGHTY, DEPTH TO ROCK
TERRACES AND DIVERSIONS	3-8%: DEPTH TO ROCK, PERCS SLOWLY 8-60%: SLOPE, DEPTH TO ROCK, PERCS SLOWLY
GRASSED WATERWAYS	3-8%: DEPTH TO ROCK, PERCS SLOWLY 8-60%: SLOPE, DEPTH TO ROCK, PERCS SLOWLY

KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: NELDORE VARIANT
UNIT MODIFIER:

RECREATIONAL DEVELOPMENT

KEYING ONLY			FOOTNOTE
CAMPS	301	CAMP AREAS	3-15%: SEVERE - TOO CLAYEY, DEPTH TO ROCK, SMALL STONES 15-60%: SEVERE - SLOPE, TOO CLAYEY, SMALL STONES
PICNIC	311	PICNIC AREAS	3-15%: SEVERE - TOO CLAYEY, SMALL STONES, DEPTH TO ROCK 15-60%: SEVERE - SLOPE, TOO CLAYEY, SMALL STONES
PLAYGD	321	PLAYGROUNDS	3-6%: SEVERE - TOO CLAYEY, SMALL STONES, DEPTH TO ROCK 6-60%: SEVERE - SLOPE, TOO CLAYEY, SMALL STONES
PATHS	331	PATHS AND TRAILS	3-15%: SEVERE - TOO CLAYEY 25-60%: SEVERE - SLOPE, TOO CLAYEY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CROPHD 451 / CROPS 341

CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S	--														

WOODLAND SUITABILITY

WOODS 361 / 371

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDEX	TREES TO PLANT
							NONE		

WINDBREAKS

WINDBK 381

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

WILDLF 391

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	V. POOR	POOR	POOR	—	—	POOR	V. POOR	V. POOR	POOR	—	—	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PHASE 401 / PLANT 411 / 421

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE: 3-10%	10-60%
BLUEBUNCH WHEATGRASS	AGSP	25	20
WESTERN WHEATGRASS	AGSM	15	5
BLUEGRASSES	POA++	10	5
BIG SAGEBRUSH	ARTR2	10	10
THREADLEAF SEDGE	CAFI	10	
BLUE GRAMA	BOGR2	5	
LIMBER PINE	PIFL2		40
MOUNTAINMOHOGANY	CERCO		5

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	3-10%	10-60%
FAVORABLE YEARS	1200	900
NORMAL YEARS	900	700
UNFAVORABLE YEARS	450	500

NOTES 441 — SYM. — FOOTNOTES

(LRA(S): 43A
(WH,HM, 4-81

NIELSEN SERIE
NONSTO

ARGIC LITHIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

THE NIELSEN SERIES CONSISTS OF SHALLOW TO BEDROCK, WELL DRAINED SOILS ON MOUNTAINS FORMED IN RESIDUUM AND SLOPE ALLUVIU FROM EXTRUSIVE IGNEOUS ROCKS. VEGETATION IS THREETIP SAGEBRUSH AND IDAHO FESCUE. ELEVATION IS 5000 TO 8500 FEET. AAP IS 13 TO 16 INCHES. FFS IS ABOUT 45 DAYS. TYPICALLY THE SURFACE IS DARK GRAYISH BROWN COBBLY LOAM ABOUT 3 INCHES THICK. TH SUBSOIL IS TYPICALLY DARK GRAYISH BROWN VERY GRAVELLY AND EXTREMELY GRAVELLY CLAY LOAM. BEDROCK OCCURS AT ABOUT 15 INCHES. SLOPES RANGE FROM 20 TO 70 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	CE-L	CL-ML, GM-GC	A-4	25-45	70-95	70-90	45-75	45-70	25-30	5-10
0-3	GRV-L	GM-GC	A-2, A-4	0-20	30-55	25-50	20-40	20-40	25-30	5-10
3-15	GRV-CL, GRX-CL, GRV-L	GC	A-2	0-30	25-55	20-50	15-40	15-35	30-40	10-20
15	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-3	15-20	-	0.6-2.0	0.11-0.14	6.6-7.3	-	MODERATE	.20	1	8	2-3	MODERATE	LOW
0-3	15-20	-	0.6-2.0	0.08-0.11	6.6-7.3	-	MODERATE	.10	1	8	2-3		
3-15	20-35	-	0.2-0.6	0.08-0.13	6.6-7.3	-	MODERATE	.10					
15													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	POOR-AREA RECLAIM,SMALL STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	20-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	SLOPE,LARGE STONES,DEPTH TO ROCK
GRASSED WATERWAYS	LARGE STONES,SLOPE,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	CR: SEVERE-SLOPE,THIN LAYER GRV: SEVERE-SMALL STONES,SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	CB: SEVERE-SLOPE,DEPTH TO ROCK GRV: SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK	PLAYGROUNDS	GRV: SEVERE-SLOPE,SMALL STONES CB: SEVERE-LARGE STONES,SLOPE,SMALL STONES
PICNIC AREAS	CB: SEVERE-SLOPE,DEPTH TO ROCK GRV: SEVERE-SLOPE,SMALL STONES,DEPTH TO ROCK	PATHS AND TRAILS	20-25% CB: MODERATE-SLOPE 25+% CB: SEVERE-SLOPE 20-25% GRV: SEVERE-SMALL STONES 25+% GRV: SEVERE-SLOPE,SMALL STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
20-40%	6E															
40-70%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGEL WILDLF
20-40%	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
40-70%	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (A)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
IDAHO FESCUE	FEID	25
BLUEBUNCH WHEATGRASS	AGSP	10
NEVADA BLUEGRASS	PONE3	5
OTHER PERENNIAL GRASSES	PPGG	10
ARROWLEAF BALSAMROOT	BASA3	5
LUPINE	LUPIN	5
OTHER PERENNIAL FORBS	PPFF	5
THREETIP SAGEBRUSH	ARTR4	20
MOUNTAIN BIG SAGEBRUSH	ARTRV	10
OTHER SHRUBS	SSSS	5

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	ALL
FAVORABLE YEARS	800
NORMAL YEARS	650
UNFAVORABLE YEARS	400

FOOTNOTES

A IDAHO RANGE SITE LOAMY FRACTURED 11-13"PPT ARTR4/FEID B12-28-I (TENT).

NE0071

S O I L S U R V E Y I N T E R P R E T A T I O N S

MLRA(S): EC. 64. 67 — ORELLA SERIES

DAY. 1-74

USTIC TORRIORTHENTS. CLAYEY. MIXED (CALCAREOUS). MESIC. SHALLOW

THE ORELLA SERIES CONSISTS OF SHALLOW. WELL OR MODERATELY WELL DRAINED SOILS FORMED IN RESIDUUM WEATHERED FROM CLAYSTONE AND SHALE ON UPLANDS. THE SURFACE LAYER IS LIGHT GRAYISH-BROWN SILTY CLAY 3 INCHES THICK. THE NEXT 10 INCHES IS LIGHT GRAYISH-BROWN CLAY. THE UNDERLYING MATERIAL IS 5 INCHES OF VERY PALE BROWN CLAY OVER SHALE. SLOPES RANGE FROM 1 TO 25 PERCENT. MOST AREAS ARE USED AS RANGELAND.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	SICL. CL	CH. CL	A-6. A-7	0	100	100	95-100	70-95	50-65	25-45
0-3	SIC. C	CH	A-7	0	100	100	90-100	75-95	50-70	30-50
3-18	C. CL	CH	A-7	0	100	100	90-100	75-95	50-70	30-50
18	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS "T"	WIND EROD. GROUP
0-3	0.2-0.6	0.12-0.14	7.9-8.4	-	HIGH	HIGH	LOW	.49	1	4L
0-3	0.06-0.2	0.09-0.11	7.9-8.4	-	HIGH	HIGH	LOW	.49	1	4L
3-18	<0.06	0.09-0.11	8.5-9.0	-	HIGH	HIGH	LOW	.49		
18										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK.PERCS SLOWLY
SEWAGE LAGOON AREAS	SEVERE-DEPTH TO ROCK.SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK.TOO CLAYEY
SANITARY LANDFILL (AREA)	1-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	POOR-TOO CLAYEY.THIN LAYER

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-TOO CLAYEY.DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL.LOW STRENGTH
DWELLINGS WITH BASEMENTS	SEVERE-LOW STRENGTH.SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	SEVERE-SHRINK-SWELL.LOW STRENGTH
LOCAL ROADS AND STREETS	SEVERE-SHRINK-SWELL.LOW STRENGTH

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	POOR-SHRINK-SWELL.LOW STRENGTH
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	POOR-THIN LAYER.TOO CLAYEY

WATER MANAGEMENT

POND RESERVOIR AREA	DEPTH TO ROCK.SLOPE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER.SHRINK-SWELL.LOW STRENGTH
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	NOT NEEDED
IRRIGATION	ROOTING DEPTH.SLOW INTAKE.SLOPE
TERRACES AND DIVERSIONS	DEPTH TO ROCK.PERCS SLOWLY.SLOPE
GRASSED WATERWAYS	ROOTING DEPTH.SLOPE

ORELLA SERIES

NE0071

RECREATION

CAMP AREAS	SEVERE-TOO CLAYEY	PLAYGROUNDS	SEVERE-TOO CLAYEY
PICNIC AREAS	SEVERE-TOO CLAYEY	PATHS AND TRAILS	SEVERE-TOO CLAYEY

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR*	IRR.	NIRR	IRR.
ALL	6S																

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS (A)

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	POTENTIAL AS HABITAT FOR: WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	POOR	-	FAIR	POOR	V. POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)

COMMON PLANT NAME	PLANT SYMBOL (NLSPM)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
WESTERN WHEATGRASS	AGSM	40
BLUE GRAMA	BOGR2	15
BUFFALOGRASS	BUDA	5
INLAND SALTGRASS	DIST	20
SANDBERG BLUEGRASS	POSE	5
COMMON PRICKLYPEAR	OPHU	5
OTHER PERENNIAL GRASSES	PPGG	3
OTHER PERENNIAL FORBS	PFFF	4
OTHER PERENNIAL GRASSLIKES	PPGL	3
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		2000
NORMAL YEARS		1200
UNFAVORABLE YEARS		500

FOOTNOTES

1 POLLUTION OF GROUND WATER IS A HAZARD
A WINDBREAK SUITABILITY GROUP 10, NEBRASKA.
B SHALLOW LIMY RANGE SITE, NEBRASKA

C00325

SOIL INTERPRETATIONS RECORD

MLRA(S): 48
REV. RD.BW. 12-79
MOLLIC CRYOBORALFS. FINE. MONTMORILLONITIC

PAGOSA SERIES

THE PAGOSA SERIES CONSIST OF DEEP WELL DRAINED SOILS FORMED IN TILL OR OUTWASH ON MOUNTAIN SLOPES. TYPICALLY THE SURFACE LAYERS ARE LOAM ABOUT 22 INCHES THICK. THE SUBSOIL IS HEAVY CLAY LOAM ABOUT 8 INCHES THICK. THE UNDERLYING LAYER IS ALSO CLAY LOAM AND ABOUT 14 INCHES THICK. IT OVERLIES SANDSTONE AT 44 INCHES. VEGETATION IS PONDEROSA PINE FOREST. AVERAGE ANNUAL PRECIPITATION IS ABOUT 40 INCHES AND THE FROST-FREE SEASON ABOUT 50 TO 75 DAYS. SLOPES ARE 4 TO 65 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-22	L	ML	A-4	5-20	90-100	85-95	75-85	60-70	25-40	NP-10
22-44	CL. C	CL. CH	A-6. A-7	10-40	90-100	90-100	80-95	65-90	30-60	15-35
44	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-22	18-27		0.6-2.0	0.17-0.20	5.1-5.5	-	LOW	.24	4	8	2-5	HIGH	MODERATE
22-44	35-45		0.06-0.2	0.16-0.18	5.6-6.0	-	HIGH	.28					
44													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		40-60	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	4-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	4-7%: MODERATE-SEEPAGE,DEPTH TO ROCK,SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	4-15%: SEVERE-DEPTH TO ROCK,TOO CLAYEY 15+%: SEVERE-DEPTH TO ROCK,SLOPE,TOO CLAYEY
SANITARY LANDFILL (AREA)	4-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-DEPTH TO ROCK,SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	4-15%: POOR-TOO CLAYEY,HARD TO PACK 15+%: POOR-TOO CLAYEY,HARD TO PACK,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	4-25%: POOR-LOW STRENGTH,SHRINK-SWELL 25+%: POOR-LOW STRENGTH,SLOPE,SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	4-15%: POOR-LARGE STONES,AREA RECLAIM 15+%: POOR-LARGE STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	4-8%: MODERATE-SEEPAGE,DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	4-8%: MODERATE-DEPTH TO ROCK,TOO CLAYEY 8-15%: MODERATE-DEPTH TO ROCK,TOO CLAYEY, SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	4-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	4-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SLOPE,SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	4-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	4-15%: SEVERE-LOW STRENGTH,SHRINK-SWELL 15+%: SEVERE-LOW STRENGTH,SLOPE,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	4-8%: MODERATE-LARGE STONES 8-15%: MODERATE-LARGE STONES,SLOPE 15+%: SEVERE-SLOPE

EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,PERCS SLOWLY,SLOPE
TERRACES AND DIVERSIONS	4-8%: LARGE STONES,PERCS SLOWLY 8+%: SLOPE,LARGE STONES,PERCS SLOWLY
GRASSED WATERWAYS	4-8%: LARGE STONES,PERCS SLOWLY 8+%: LARGE STONES,SLOPE,PERCS SLOWLY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	4-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	4-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	4-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PATHS AND TRAILS	4-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
4-40%	6E															
40+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
4-40%	5O	MODERATE	SLIGHT	MODERATE	SLIGHT	SLIGHT	PONDEROSA PINE	70	PONDEROSA PINE
40+%	5R	SEVERE	MODERATE	MODERATE	SLIGHT	SLIGHT	ENGELMANN SPRUCE	48	

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERBS.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
4-40%	POOR	POOR	GOOD	-	GOOD	FAIR	V. POOR	POOR	FAIR	GOOD	V. POOR	-
40+%	V. POOR	V. POOR	GOOD		GOOD	FAIR	V. POOR	V. POOR	POOR	FAIR	V. POOR	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		WOODLAND	RANGELAND				
ARIZONA FESCUE	FEAR2	15	15				
MOUNTAIN MUHLY	MUMO	10	10				
PARRY OATGRASS	DAPA2	5	10				
WESTERN WHEATGRASS	AGSM	20	5				
GAMBEL OAK	QUGA	10	10				
FRINGED SAGEBRUSH	ARFR4	10	10				
PINE DROPSEED	BLTR	5	10				
OTHER PERENNIAL GRASSES	PPGG	10	20				
OTHER PERENNIAL FORBS	PPFF	10	10				
OTHER SHRUBS	SSSS	5	5				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		450	1800				
NORMAL YEARS		400	1600				
UNFAVORABLE YEARS		300	1400				

FOOTNOTES

ALPA(S): 33, 46 PARKAY VARIA
LKM,JFY, 2-81
ARGIC PACHIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

PARKAY VARIANTS ARE VERY DEEP WELL DRAINED SOILS ON COLLUVIAL MOUNTAIN SLOPES. PARENT MATERIAL IS HARD SANDSTONE. THE SURFACE LAYER IS DARK BROWN BOULDERY LOAM ABOUT 6 INCHES THICK. THE UPPER SUBSOIL IS BROWN TO DARK BROWN BOULDERY CLAY LOAM ABOUT 18 INCHES THICK. THE LOWER SUBSOIL IS YELLOWISH BROWN EXTREMELY BOULDERY CLAY LOAM ABOUT 11 INCHES THICK. TH SUBSTRATUM IS EXTREMELY BOULDERY CLAY LOAM TO 60 INCHES OR MORE. PPT IS 15 TO 19 INCHES. MAST IS 37 TO 44 F. FFS IS LES THAN 70 DAYS. ELEVATION IS 7500 TO 8500 FEET. SLOPES RANGE FROM 8 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-6	BY-L	CL-ML	A-4	25-50	85-100	85-100	60-80	50-75	20-30	5-10
6-24	BY-CL	CL	A-6	25-50	85-100	85-100	70-90	60-85	30-40	10-20
24-35	BYX-CL	CL	A-6	70-90	85-100	85-100	70-90	60-85	30-40	10-20
35-60	BYX-CL, BYX-L	CL	A-6	70-90	85-100	85-100	65-85	55-80	25-40	10-20

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-6	15-25		0.6-2.0	0.08-0.11	6.6-7.3	-	LOW	.15	5	8	2-4	MODERATE	LOW
6-24	28-35		0.2-0.6	0.09-0.12	6.6-7.3	-	MODERATE	.17					
24-35	28-35		0.2-0.6	0.02-0.04	6.6-7.3	-	MODERATE	.05					
35-60	25-30		0.2-0.6	0.02-0.04	6.6-7.8	-	MODERATE	.05					

FLOODING FREQUENCY	FLOODING DURATION	HIGH WATER TABLE MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0					>60		-		B	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	8-15%: SEVERE-PERCS SLOWLY,LARGE STONES 15+%: SEVERE-PERCS SLOWLY,SLOPE,LARGE STONES
SEWAGE LAGOON AREAS	SEVERE-SLOPE,LARGE STONES
SANITARY LANDFILL (TRENCH)	8-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
SANITARY LANDFILL (AREA)	8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	8-15%: POOR-LARGE STONES 15+%: POOR-LARGE STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	8-25%: POOR-LARGE STONES 25+%: POOR-LARGE STONES,SLOPE
SAND	IMPROBABLE-EXCESS FINES,LARGE STONES
GRAVEL	IMPROBABLE-EXCESS FINES,LARGE STONES
TOPSOIL	8-15%: POOR-LARGE STONES,AREA RECLAIM 15+%: POOR-LARGE STONES,AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,SLOPE
TERRACES AND DIVERSIONS	SLOPE,LARGE STONES
GRASSED WATERWAYS	LARGE STONES,SLOPE,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	8-15%: SEVERE-LARGE STONES 15+%: SEVERE-LARGE STONES,SLOPE
DWELLINGS WITHOUT BASEMENTS	8-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
DWELLINGS WITH BASEMENTS	8-15%: SEVERE-LARGE STONES 15+%: SEVERE-SLOPE,LARGE STONES
SMALL COMMERCIAL BUILDINGS	SEVERE-SLOPE,LARGE STONES
LOCAL ROADS AND STREETS	8-15%: SEVERE-LOW STRENGTH,LARGE STONES 15+%: SEVERE-LOW STRENGTH,SLOPE,LARGE STONES
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	8-15%: SEVERE-LARGE STONES 15+%: SEVERE-LARGE STONES,SLOPE

REGIONAL INTERPRETATIONS

3602

RECREATIONAL DEVELOPMENT

CAMP AREAS	8-15%: MODERATE-SLOPE,PERCS SLOWLY 15+%: SEVERE-SLOPE	PLAYGROUNDS	SEVERE-LARGE STONES,SLOPE
PICNIC AREAS	8-15%: MODERATE-SLOPE,PERCS SLOWLY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	8-15%: MODERATE-LARGE STONES 15-25%: MODERATE-LARGE STONES,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORTY.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	POOR	-	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE
BIG SAGEBRUSH	ARTR2	10
BLUEBUNCH WHEATGRASS	AGSP	10
COLUMBIA NEEDLEGRASS	STCO3	20
IDAHO FESCUE	FEID	20
SPIKE-FESCUE	HEKI	15
LUPINE	LUPIN	5

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	1600
NORMAL YEARS	1350
UNFAVORABLE YEARS	1100

FOOTNOTES

SOIL INTERPRETATIONS RECORD

[illegible]: 32, 34, CmA, 67, 69 — PATENT SERIES
47, 48
COMPONENTS, FINE-LOAMY, MIXED (CALCAREOUS), FRIGID — DRY

THE PATENT SERIES ARE WELL DRAINED SOILS FORMING IN ALLUVIUM ON NEARLY LEVEL TO MODERATELY STEEP ALLUVIAL FANS AND FOOTSLOPES. SLOPES ARE 0 TO 30 PERCENT. ELEVATION IS 5200 TO 6000 FEET. PPT IS ABOUT 13 INCHES. MAST IS 45 TO 47 F. TYPICALLY THE PROFILE IS LIGHT REDDISH GRAY CLAY LOAM TO 60 INCHES OR MORE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENTAGE PASSING SIEVE NO. 4 (>3 IN)	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	L	CL, CL-ML	A-6, A-4	0-5	95-100	90-100	80-95	20-35	5-15
0-7	CL	CL	A-6, A-7	0-5	95-100	85-100	80-90	35-45	15-25
7-60	L, CL, VFSL	CL, CL-ML	A-6, A-7, A-4	0-5	85-100	75-100	70-100	20-45	5-25

DEPTH (IN.)	CLAY (<2MM)	MOIST BULK DENSITY (G/CM3)	SOIL-WATER AVAILABILITY (IN/IN)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-7	20-27	1.10-1.40	0.09-0.20	0.10-0.22	7.4-8.4	<2	MODERATE	.28	5	48	1-3	HIGH	LOW
7-27	27-35	1.10-1.40	0.12-0.20	0.19-0.21	7.4-8.4	<2	MODERATE	.32	5	48	1-3		
27-60	18-35	1.30-1.60	0.12-0.20	0.14-0.19	7.9-8.4	<2	MODERATE	.32					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTH	PERMANENT WATER TABLE DEPTH (FT)	PERMANENT WATER TABLE KIND	PERMANENT WATER TABLE MONTHS	PONDING DEPTH (IN)	PONDING DURATION	PONDING MONTH	SUBSIDENCE INITIAL (IN)	SUBSIDENCE TOTAL (IN)	WIND ERODIBILITY GROUP	POTENTIAL FROST ACTION
NONE			>6								5	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY, SLOPE
SEWAGE LAGOON AREAS	0-2%: MODERATE-SEEPAGE 2-7%: MODERATE-SEEPAGE, SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

CONSTRUCTION MATERIALS

ROADFILL	0-25%: POOR-LOW STRENGTH 25+%: POOR-LOW STRENGTH, SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8% L: FAIR-LARGE STONES 8-15% L: FAIR-LARGE STONES, SLOPE 0-8% CL: FAIR-TOO CLAYEY, LARGE STONES 8-15% CL: FAIR-TOO CLAYEY, LARGE STONES, SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE 3-8%: MODERATE-SEEPAGE, SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: FAVORABLE 3+%: SLOPE
TERRACES AND DIVERSIONS	0-8%: FAVORABLE 8+%: SLOPE
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL, SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE, SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL, SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-15%: SEVERE-LOW STRENGTH 15+%: SEVERE-LOW STRENGTH, SLOPE
GRASS PLAYGROUNDS AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE

RECREATIONAL DEVELOPMENTS

JUL 7 1980

RECREATIONAL DEVELOPMENT

AREAS	0-8% CL: SLIGHT 8-15% CL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-15% L: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% CL: SLIGHT 2-6% CL: MODERATE-SLOPE 0-2% L: MODERATE-DUSTY 2-6% L: MODERATE-SLOPE,DUSTY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% CL: SLIGHT 8-15% CL: MODERATE-SLOPE 0-8% L: MODERATE-DUSTY 8-15% L: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% CL: SLIGHT 15-25% CL: MODERATE-SLOPE 0-15% L: MODERATE-DUSTY 15-25% L: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELD PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		GRASS HAY (TONS)		PASTURE (AUM)									
	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR
0-6%	6E	3E	-	3	-	3	-	4								
6-10%	6E	4E	-	2.5	-	2.5	-	4								
10-15%	6E	6E	-	2	-	2	-	3								
15-30%	6E	-	-	-	-	-	-	-								

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	NEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-10% IRR	FAIR	GOOD	GOOD	-	-	GOOD	POOR	V. POOR	GOOD	-	V. POOR	-
10-15% IRR	POOR	FAIR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND UNDER ONE OF UNGLESIDRY VEGETATION) (A)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: MOIST	DRY			
BIG SAGEBRUSH	ARTR2	10				
BLUEBUNCH WHEATGRASS	AGSP	20				
CANBY BLUEGRASS	POCA	5				
CUSICK BLUEGRASS	POCU3	5				
GARDNER SALTBUSH	ATNU2	5				
INDIAN RICEGRASS	ORHY	5				
PRAIRIE JUNEGRASS	KOCR	5	5			
WESTERN WHEATGRASS	AGSM	20	20			
GREEN NEEDLEGRASS	STVI4	10				
OTHER PERENNIAL GRASSES	PPGG	10				
OTHER PERENNIAL FORBS	PPFF	5				
NEEDLEANDTHREAD	STCO4		20			
MOUNTAIN MUDLY	MUMO		10			
BLUEGRASS	POA++					
BLUE GRAMA	POSR2		5			
POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
FAVORABLE YEARS		1100	1100			
NORMAL YEARS		800	800			
UNFAVORABLE YEARS		500	500			

FOOTNOTES

A MOIST: LRA 32, DRY: LRA C48A.

WY0218

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 60
REV. JFY-FS, 3-79
USTERTIC TORRIORTHENTS, FINE, MONTMORILLONITIC (CALCAREOUS), MESIC

PETRIE SERIES

THE PETRIE SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS, SIDESLOPES, AND BOTTOMS OF SMALL DRAINAGEWAYS. ELEVATION IS 3,700 TO 5,200 FEET. PPT IS ABOUT 13 INCHES, MAST IS ABOUT 53 F., AND THE FFS IS 105 TO 130 DAYS. TYPICALLY, THE PROFILE IS LIGHT BROWNISH-GRAY TO LIGHT YELLOWISH-BROWN CLAY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 10 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	CL	CL	A-7	0	80-100	75-100	75-100	60-80	40-45	20-25
4-60	CL, C, SIC	CL, CH	A-7	0	80-100	75-100	75-100	60-95	40-55	25-35

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-4	30-35		0.06-0.2	0.19-0.21	>8.4	2-4	HIGH	.49	5	4	.5-1	HIGH	HIGH
4-60	35-45		<0.06	0.14-0.20	>8.4	4-8	HIGH	.49					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	POOR-HARD TO PACK

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH,SHRINK-SWELL
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	MODERATE-HARD TO PACK
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: PERCS SLOWLY,ERODES EASILY 3+%: PERCS SLOWLY,SLOPE,ERODES EASILY
TERRACES AND DIVERSIONS	0-8%: ERODES EASILY,PERCS SLOWLY 8+%: SLOPE,ERODES EASILY,PERCS SLOWLY
GRASSED WATERWAYS	0-8%: ERODES EASILY,PERCS SLOWLY 8+%: SLOPE,ERODES EASILY,PERCS SLOWLY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-10%: MODERATE-TOO CLAYEY,SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: MODERATE-PERCS SLOWLY 8-10%: MODERATE-SLOPE,PERCS SLOWLY	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES,PERCS SLOWLY 2-6%: MODERATE-SLOPE,SMALL STONES, PERCS SLOWLY 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: MODERATE-PERCS SLOWLY 8-10%: MODERATE-SLOPE,PERCS SLOWLY	PATHS AND TRAILS	SEVERE-ERODES EASILY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	7S	6S	-	1.0	-	3.0										
6-10%	7E	6E	-	1.0	-	3.0										

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	POOR	POOR	POOR	-	-	POOR	GOOD	V. POOR	POOR	-	FAIR	POOR
NIRR	POOR	POOR	POOR	-	-	POOR	POOR	V. POOR	POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ALKALI SACATON	SPAI	10
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
GARDNER SALTBUSH	ATNU2	30
GREASEWOOD 1/	SARCO	10
INLAND SALTGRASS	DIST	10
WESTERN WHEATGRASS	AGSM	20
WINTERFAT	EULA5	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		650
NORMAL YEARS		500
UNFAVORABLE YEARS		250

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

SOIL SURVEY INTERPRETATIONS

MLRA(S): 46, 52, 58, 59

COC-RER, 3-75

LITHIC USTIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), FRIGID

RENTSAC SERIES

THE RENTSAC SERIES CONSISTS OF SHALLOW, WELL-DRAINED SOILS FORMED IN MATERIALS WEATHERED FROM SANDSTONE. TYPICALLY THESE SOILS HAVE A CHANNERY LOAM SURFACE AND THE UNDERLYING MATERIAL IS CHANNERY LOAM OR VERY CHANNERY AND FLAGGY LOAM. THEY OCCUPY UPLANDS IN A 10 TO 15 INCH PRECIPITATION ZONE. THE NATIVE VEGETATION IS MAINLY MID AND SHORT GRASSES. THE GROWING SEASON IS 105 TO 135 DAYS. SLOPES ARE 0 TO 45 PERCENT. SANDSTONE IS AT DEPTHS OF 4 TO 20 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	CN-L	GM, ML	A-2, A-4	5-10	50-80	35-75	30-65	25-55	20-35	NP-10
0-7	FLV-L	GM	A-2	65-80	55-65	35-45	30-40	25-35	20-35	NP-5
0-7	CNV-L	GM	A-1	5-10	35-45	25-35	15-30	10-25	-	NP
7-18	CNV-L, FL-L, CNV-SL	GM	A-1	20-40	30-55	20-30	15-30	10-25	-	NP
18	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-7	0.6-2.0	0.09-0.14	6.6-7.8	-	LOW	HIGH	LOW	.37	1	5
0-7	2.0-6.0	0.04-0.08	6.6-7.8	-	LOW	HIGH	LOW	.24	1	8
0-7	2.0-6.0	0.04-0.08	6.6-7.8	-	LOW	HIGH	LOW	.24	1	8
7-18	2.0-6.0	0.04-0.10	7.4-8.4	<4	LOW	HIGH	LOW	.24		
18										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		4-20	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK,SEEPAGE 7+%: SEVERE-SLOPE,DEPTH TO ROCK,SEEPAGE
SANITARY LANDFILL (TRENCH)	0-25%: SEVERE-DEPTH TO ROCK,SEEPAGE 25+%: SEVERE-SLOPE,DEPTH TO ROCK,SEEPAGE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-SEEPAGE 15+%: SEVERE-SLOPE,SEEPAGE
DAILY COVER FOR LANDFILL	0-15%: POOR-SMALL STONES,THIN LAYER, AREA RECLAIM 15+%: POOR-SLOPE,SMALL STONES,THIN LAYER

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK,SMALL STONES 15+%: SEVERE-SLOPE,DEPTH TO ROCK, SMALL STONES
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	0-25%: POOR-DEPTH TO ROCK,THIN LAYER 25+%: POOR-SLOPE,DEPTH TO ROCK,THIN LAYER
SAND	UNSUITED
GRAVEL	UNSUITED-THIN LAYER
TOPSOIL	0-15%: POOR-THIN LAYER,AREA RECLAIM, SMALL STONES 15+%: POOR-SLOPE,THIN LAYER,SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	0-4%: DEPTH TO ROCK,SEEPAGE 4+%: SLOPE,DEPTH TO ROCK,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,PIPING
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,ROOTING DEPTH 8+%: SLOPE,DEPTH TO ROCK,ROOTING DEPTH
GRASSED WATERWAYS	0-4%: ROOTING DEPTH 4+%: ROOTING DEPTH,SLOPE

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	0-8% CN: MODERATE-SMALL STONES 8-15% CN: MODERATE-SLOPE,SMALL STONES 15+% CN: SEVERE-SLOPE 0-15% FLV,CNV: SEVERE-SMALL STONES 15+% FLV,CNV: SEVERE-SLOPE,SMALL STONES	PLAYGROUNDS	0-6%: SEVERE-SMALL STONES 6+%: SEVERE-SMALL STONES,SLOPE
PICNIC AREAS	0-8% CN: MODERATE-SMALL STONES 8-15% CN: MODERATE-SLOPE,SMALL STONES 15+% CN: SEVERE-SLOPE 0-15% FLV,CNV: SEVERE-SMALL STONES 15+% FLV,CNV: SEVERE-SLOPE,SMALL STONES	PATHS AND TRAILS	0-15% CN: MODERATE-SMALL STONES 15-25% CN: MODERATE-SLOPE,SMALL STONES 25+% CN: SEVERE-SLOPE 0-25% FLV,CNV: SEVERE-SMALL STONES 25+% FLV,CNV: SEVERE-SLOPE,SMALL STONES

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	40
PRAIRIE SANDREED	CALO	20
GREEN NEEDLEGRASS	STVI4	10
NEEDLEANDTHREAD	STCO4	5
WESTERN WHEATGRASS	AGSM	5
BLUE GRAMA	BOGR2	5
OTHER ANNUAL GRASSES	AAGG	5
OTHER ANNUAL FORBS	AAFF	5
OTHER SHRUBS	SSSS	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		800
NORMAL YEARS		
UNFAVORABLE YEARS		400

FOOTNOTES

DC0015 SOIL INTERPRETATIONS RECORD

MLRA(S): ALL
REV. LNL. 8-81

ROCK OUTCROP

ROCK OUTCROP CONSISTS OF EXPOSURES OF BARE, HARD BEDROCK OTHER THAN LAVA FLOWS AND ROCK-LINED PITS. THEY CONSIST MAINL OF UNWEATHERED VOLCANIC AND METAMORPHIC ROCK, BUT INCLUDES SOME SEDIMENTARY ROCK SUCH AS CONSOLIDATED LIMESTONE AND CONGLOMERATE. SLOPES RANGE FROM 0 TO 200 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-60	UWB	-	-	-	-	-	-	-	-	-

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-60	-	-	-	-	-	-		-	-	-	-		

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT FROST ACTION
NONE			>6.0			-		0	HARD	-		D	-

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-AREA RECLAIM
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DEPTH TO ROCK 3+%: DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPA-BILITY													
	NIRR	IIRR	IIIRR	IVRR	VIRR	VIIRR	VIIIRR	NIRR	IIRR	IIIRR	IVRR	VIRR	VIIRR	VIIIRR
ALL	RS													

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLE	WOODLD WILDLE	WETLAND WILDLE	RANGEL WILDLE
ALL	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POO

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL				

POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS					
NORMAL YEARS					
UNFAVORABLE YEARS					

FOOTNOTES

WY0362

SOIL INTERPRETATIONS RECORD

MLRA(S): 34
REV. JFY-JRS. 2-79
BOROLLIC HAPLARGIDS, FINE-LOAMY, MIXED

ROCK RIVER SERIES

THE ROCK RIVER SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND TOE SLOPES. ELEVATION IS 6,500 TO 7,500 FEET. PPT IS 10 TO 12 INCHES, MAAT IS ABOUT 42 F., AND THE FFS IS 80 TO 100 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH-GRAY SANDY LOAM ABOUT 2 INCHES THICK. THE UPPER SUBSOIL IS YELLOWISH-BROWN SANDY CLAY LOAM ABOUT 17 INCHES THICK. THE LOWER SUBSOIL IS YELLOWISH-BROWN SANDY LOAM ABOUT 7 INCHES THICK. THE SUBSTRATUM IS LIGHT BROWNISH-GRAY SANDY LOAM TO 60 INCHES OR MORE. SLOPES ARE 0 TO 10 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	SL	SM	A-2	0-5	85-100	85-100	60-70	25-35	15-20	NP-5
0-3	GR-L	CL, CL-ML, SC, SM-SC	A-4, A-6	0-5	80-100	60-75	50-65	45-65	15-30	5-15
3-19	SCL, GR-SCL	SM, SM-SC	A-4	0-5	90-100	70-100	60-90	35-45	15-25	NP-10
19-60	SL	SM	A-2	0-5	85-100	85-100	60-70	25-35	15-20	NP-5
60-70	GR-L, GR-SL	ML, CL-ML, SM, SM-SC	A-4	0-5	80-95	70-80	55-75	40-60	15-25	NP-10

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-3	10-18		2.0-6.0	0.11-0.13	6.6-7.3	<2	LOW	.20	5	3	.5-2	HIGH	MODERATE
0-3	18-25		0.6-2.0	0.13-0.18	6.6-7.8	<2	LOW	.28	5	5	.5-2		
3-19	20-30		0.6-2.0	0.14-0.16	6.6-7.8	<2	LOW	.28					
19-60	5-15		2.0-6.0	0.11-0.13	7.9-9.0	2-4	LOW	.24					
60-70	15-25		0.6-6.0	0.08-0.13	7.9-9.0	2-4	LOW	.24					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-10%: FAIR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-SMALL STONES

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-SEEPAGE 8+%: SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% GR-L: FAVORABLE 3+% GR-L: SLOPE 0-3% SL: SOIL BLOWING 3+% SL: SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	0-8% GR-L: FAVORABLE 8+% GR-L: SLOPE 0-8% SL: SOIL BLOWING 8+% SL: SLOPE,SOIL BLOWING
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-10%: MODERATE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8% SL: SLIGHT 8-10% SL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-10% GR: MODERATE-SMALL STONES,SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% SL: SLIGHT 8-10% SL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-10% GR: MODERATE-SLOPE,SMALL STONES	PLAYGROUNDS	0-2% SL: MODERATE-SMALL STONES 2-6% SL: MODERATE-SLOPE,SMALL STONES 6+% SL: SEVERE-SLOPE 0-6% GR: SEVERE-SMALL STONES 6+% GR: SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	0-8% SL: SLIGHT 8-10% SL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-10% GR: MODERATE-SLOPE,SMALL STONES	PATHS AND TRAILS	SL: SLIGHT GR-L: MODERATE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		BARLEY (BU)		PASTURE (AUM)									
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	6E	4E	-	3	-	75	-	4.5								
6-10%	6E	6E	-	2	-	60	-	3.5								

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL	RUSSIAN-OLIVE		SIBERIAN ELM		COMMON CHOKECHERRY		PONDEROSA PINE	

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
IRR	FAIR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
NEEDLEANDTHREAD	STCO4	25
THICKSPIKE WHEATGRASS	AGDA	15
INDIAN RICEGRASS	ORHY	10
BLUEBUNCH WHEATGRASS	AGSP	10
CANBY BLUEGRASS	POCA	10
BIG SAGEBRUSH	ARTR2	10
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
LOW RABBITBRUSH	CHVIH2	5
BLUE GRAMA	BOGR2	15
WESTERN WHEATGRASS	AGSM	15
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1,500
NORMAL YEARS		1,200
UNFAVORABLE YEARS		700

FOOTNOTES

SOIL INTERPRETATIONS RECORD

LRA(S): ALL
EV. LNL, 8-81

RUBBLE LAND

RUBBLE LAND CONSISTS OF AREAS OF STONES AND BOULDERS. RUBBLE LAND IS COMMONLY AT THE BASE OF ROCK OUTCROPS BUT SOME AREAS ARE DEPOSITS OF COBBLES, STONES, AND BOULDERS LEFT ON MOUNTAIN SIDES BY GLACIATION OR BY PERIGLACIAL PROCESSES. SLOPES RANGE FROM 15 TO 150 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-60	FRAG	GP	A-1	75-90	0-10	0-5	0-5	0	-	NP

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-60	0	-	>20	0.-0.1	-	-	LOW	-	-	8	<.1		

FLOODING FREQUENCY	FLOODING DURATION	HIGH WATER TABLE MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0		-		>48	HARD	-		A	-

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-SLOPE,LARGE STONES
SEWAGE LAGOON AREAS	SEVERE-SLOPE,LARGE STONES
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK,SEEPAGE,SLOPE
SANITARY LANDFILL (AREA)	SEVERE-SLOPE
DAILY COVER FOR LANDFILL	POOR-LARGE STONES,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-LARGE STONES,SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SLOPE,LARGE STONES
DWELLINGS WITH BASEMENTS	SEVERE-SLOPE,LARGE STONES
SMALL COMMERCIAL BUILDINGS	SEVERE-SLOPE,LARGE STONES
LOCAL ROADS AND STREETS	SEVERE-SLOPE,LARGE STONES
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	SEVERE-SMALL STONES,LARGE STONES,DROUGHTY

CONSTRUCTION MATERIAL

ROADFILL	15-25%: POOR-LARGE STONES 25+%: POOR-LARGE STONES,SLOPE
SAND	IMPROBABLE-SMALL STONES,LARGE STONES
GRAVEL	IMPROBABLE-LARGE STONES
TOPSOIL	POOR-LARGE STONES,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,SLOPE
TERRACES AND DIVERSIONS	SLOPE,LARGE STONES
GRASSED WATERWAYS	LARGE STONES,SLOPE,DROUGHTY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-SLOPE,SMALL STONES	PLAYGROUNDS	SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	SEVERE-SLOPE,SMALL STONES	PATHS AND TRAILS	15-25%: SEVERE-LARGE STONES,SMALL STONES 25+%: SEVERE-LARGE STONES,SLOPE,SMALL STONES

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	8S															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORTLY	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE									

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGEL WILDLF
ALL	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL			

POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS	0				
NORMAL YEARS	0				
UNFAVORABLE YEARS	0				

FOOTNOTES

WY0090

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 67, 32, 60
REV. JFY, 1-80
USTIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), MESIC, SHALLOW

SHINGLE SERIES

THE SHINGLE SERIES ARE WELL DRAINED SOILS FORMED IN RESIDUUM FROM SHALE OR INTERBEDDED SANDSTONE AND SHALE ON UPLANDS. PPT IS 10 TO 16 INCHES. MAST IS 47 TO 58 F., AND FFS IS 105 TO 140 DAYS. TYPICALLY, THE PROFILE IS LIGHT BROWNISH GRAY TO LIGHT YELLOWISH-BROWN CLAY LOAM UNDERLAIN BY BEDROCK AT A DEPTH OF 15 INCHES. SLOPES RANGE FROM 0 TO 40 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	L	ML	A-4	0-5	75-100	75-100	70-95	55-75	25-35	NP-10
0-4	FSL	SM	A-4	0-5	75-100	75-100	70-85	35-50	20-30	NP-5
0-4	CL, GR-CL	CL	A-6	0-5	75-100	70-100	65-100	50-80	35-40	15-20
4-15	CL, L	CL	A-6	0	75-100	75-100	65-100	50-80	30-40	10-20
15	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND ERODIBILITY GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	18-27		0.6-2.0	0.16-0.18	7.4-9.0	<2	LOW	.32	2	4L	<1	HIGH	LOW
0-4	10-18		0.6-2.0	0.13-0.15	7.4-9.0	<2	LOW	.32	2	3	<1		
0-4	27-35		0.6-2.0	0.19-0.21	7.4-9.0	<2	MODERATE	.32	2	4L	<1		
4-15	20-35		0.6-2.0	0.16-0.21	7.4-9.0	<2	MODERATE	.49					
15													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		4-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% L,CL,GR-CL: DEPTH TO ROCK 3+% L,CL,GR-CL: DEPTH TO ROCK,SLOPE 0-3% FSL: SOIL BLOWING,DEPTH TO ROCK 3+% FSL: SOIL BLOWING,DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,ERODES EASILY 8+%: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY,DEPTH TO ROCK 8+%: SLOPE,ERODES EASILY,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL,DEPTH TO ROCK 8-15%: MODERATE-SHRINK-SWELL,SLOPE, DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL,DEPTH TO ROCK 4-8%: MODERATE-SHRINK-SWELL,SLOPE, DEPTH TO ROCK 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-DEPTH TO ROCK,LOW STRENGTH, SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6% L,FSL: SEVERE-DEPTH TO ROCK 6+% L,FSL: SEVERE-SLOPE,DEPTH TO ROCK 0-6%CL,GR: SEVERE-SMALL STONES,DEPTH TO ROCK 6+% CL,GR: SEVERE-SLOPE,SMALL STONES, DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15% FSL,CL,GR-CL: SLIGHT 15-25% FSL,CL,GR-CL: MODERATE-SLOPE 0-15% L: MODERATE-DUSTY 15-25% L: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	6S	4S		2		5										
3-10%	6E	6E		1.5		4										
10-15%	7E	6E		1.5		4										
15+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	-
0-10% NIRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR
10+% NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR
HIGH PE	V. POOR	V. POOR	FAIR	POOR	V. POOR	-	V. POOR	V. POOR	V. POOR	V. POOR	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE					
		L,FSL	CL,GR-CL	HIGH PE			
BIG SAGEBRUSH	ARTR2	5	5	-			
BLUEBUNCH WHEATGRASS	AGSP	30	20	-			
BLUE GRAMA	BOGR2	10	10	10			
CUSICK BLUEGRASS	POCU3		5	-			
GREEN NEEDLEGRASS	STVI4		15	-			
INDIAN RICEGRASS	ORHY	5		-			
NEEDLEANDTHREAD	STCO4	10		20			
NEEDLELEAF SEDGE	CAEL2	5	5	-			
SIDEOATS GRAMA	BOCU	5		10			
THREADLEAF SEDGE	CAFI	5		10			
WESTERN WHEATGRASS	AGSM	10	25	20			
OTHER PERENNIAL FORBS	PPFF	10	10	-			
OTHER ANNUAL FORBS	AAFF	5	5	10			
LITTLE BLUESTEM	ANSC2			20			
GALLETA	HIJA			10			
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		1200	1200	1800			
NORMAL YEARS		900	900	1500			
UNFAVORABLE YEARS		450	450	1000			

FOOTNOTES

WY0250

SOIL INTERPRETATIONS RECORD

MLRA(S): 32, 34, 48
REV. JFY, 2-81

SINKSON SERIES

STIC TORRIORTHENTS, FINE-LOAMY, MIXED (CALCAREOUS), FRIGID

THE SINKSON SERIES ARE WELL-DRAINED SOILS FORMING IN REDDISH ALLUVIUM ON NEARLY LEVEL TO MODERATELY STEEP ALLUVIAL FANS. ELEVATION IS 4500 TO 6000 FEET. PPT IS ABOUT 14 INCHES. MAST IS 44 TO 47 F. TYPICALLY, THE SURFACE LAYER IS DARK RED LOAM, ABOUT 3 INCHES THICK. THE SUBSTRATUM IS REDDISH-BROWN LOAM TO 60 INCH OR MORE. SLOPES RANGE FROM 0 TO 30 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	L, VFSL, SIL	CL-ML, ML	A-4	0	95-100	95-100	90-95	70-85	20-30	NP-10
0-3	GR-SL	GM, SM	A-2, A-1, A-4	0-10	60-80	50-75	35-70	20-40	20-25	NP-5
3-60	L, CL	CL-ML, CL	A-4, A-6	0	95-100	95-100	80-90	60-70	25-35	5-15
60-70	GR-L	CL-ML, GM-GC, ML, GM	A-2, A-4	0-10	60-80	50-75	30-70	25-60	20-30	NP-10

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-3	15-25		0.6-2.0	0.16-0.18	7.9-8.4	<4	LOW	.43	5	5	1-2	HIGH	LOW
0-3	10-15		0.6-2.0	0.16-0.18	7.9-8.4	<4	LOW	.24	5	3	1-2		
3-60	18-35		0.6-2.0	0.16-0.18	7.9-8.4	<4	MODERATE	.55					
60-70	18-27		0.5-2.0	0.14-0.16	7.9-8.4	<4	LOW	.20					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE 15+%: POOR-SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SLOPE,SHRINK-SWELL 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8% L,VFSL,SIL: SLIGHT 8-15% L,VFSL,SIL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SMALL STONES,SLOPE 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-15%: GOOD 15-25%: FAIR-SLOPE 25+%: POOR-SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-8% L,VFSL,SIL: GOOD 8-15% L,VFSL,SIL: FAIR-SLOPE 0-8% GR: FAIR-SMALL STONES 8-15% GR: FAIR-SMALL STONES,SLOPE 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: ERODES EASILY 3+%: SLOPE,ERODES EASILY
TERRACES AND DIVERSIONS	0-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY
GRASSED WATERWAYS	0-8%: ERODES EASILY 8+%: SLOPE,ERODES EASILY

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% L,VFSL,SIL: SLIGHT 8-15% L,VFSL,SIL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2% L,VFSL,SIL: SLIGHT 2-6% L,VFSL,SIL: MODERATE-SLOPE 6+% L,VFSL,SIL: SEVERE-SLOPE 0-6% GR: SEVERE-SMALL STONES 6+% GR: SEVERE-SLOPE,SMALL STONES
PICNIC AREAS	0-8% L,VFSL,SIL: SLIGHT 8-15% L,VFSL,SIL: MODERATE-SLOPE 0-8% GR: MODERATE-SMALL STONES 8-15% GR: MODERATE-SLOPE,SMALL STONES 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-25%: SEVERE-ERODES EASILY 25+%: SEVERE-SLOPE,ERODES EASILY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		GRASS HAY (TONS)		PASTURE (AUM)									
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-6%	6E	3E	-	3	-	3	-	4								
6-10%	6E	4E	-	2.5	-	2.5	-	4								
10-15%	6E	6E	-	2	-	2	-	3								
15+%	6E	-	-	-	-	-	-	-								

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:		
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-6% IRR	FAIR	GOOD	GOOD	-	-	GOOD	POOR	V. POOR	GOOD	-	V. POOR	-
6-10% IRR	FAIR	GOOD	GOOD	-	-	GOOD	V. POOR	V. POOR	GOOD	-	V. POOR	-
10+% IRR	POOR	FAIR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	-
NIRR	POOR	FAIR	FAIR	-	-	FAIR	V. POOR	V. POOR	FAIR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	10
BLUEBUNCH WHEATGRASS	AGSP	35
INDIAN RICEGRASS	ORHY	10
NEEDLEANDTHREAD	STCO4	10
PRAIRIE JUNEGRASS	KOCR	5
WESTERN WHEATGRASS	AGSM	15

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	1100
NORMAL YEARS	800
UNFAVORABLE YEARS	500

FOOTNOTES

WY0063

SOIL INTERPRETATIONS RECORD

MLRA(S): 43
REV. JFY,FS, 1-80
LITHIC CRYOBOROLLS, LOAMY-SKELETAL, MIXED

STARLEY SERIES

THE STARLEY SERIES ARE WELL-DRAINED SOILS FORMED IN RESIDUUM FROM LIMESTONE ON HILL CRESTS AND RIDGES. ELEVATION IS 6500 TO 8500 FEET. PPT IS ABOUT 18 INCHES AND MAST IS 32 TO 46F. TYPICALLY, THE SURFACE LAYER IS BROWN COBBLY LOAM, ABOUT 9 INCHES THICK. THE UNDERLYING LAYER IS PALE BROWN VERY COBBLY LOAM, ABOUT 6 INCHES THICK, AND IS UNDERLAIN BY HARD LIMESTONE BEDROCK AT A DEPTH OF 15 INCHES. SLOPES RANGE FROM 0 TO 60 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-9	GR-L, CN-L	GM-GC, SM, SM-SC, GM	A-4	5-15	70-75	70-75	50-70	35-50	25-35	5-10
0-9	CNV-L, GRV-L	GM-GC, GM	A-2	0-10	35-60	35-50	30-40	25-35	25-35	5-10
0-9	CB-L	SM-SC, SM	A-4	20-30	75-80	75-80	60-70	40-50	25-35	5-10
9-15	CBV-L, GRV-L, GRV-CL	GM-GC, GM	A-2, A-4	20-50	40-60	40-60	25-45	20-40	25-35	5-10
15	UWB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-9	18-27		0.6-2.0	0.09-0.12	6.6-8.4	<2	LOW	.24	1	6	1-3	HIGH	LOW
0-9	18-27		0.6-2.0	0.05-0.12	6.6-8.4	<2	LOW	.20	1	8	1-3		
0-9	18-27		0.6-2.0	0.09-0.12	6.6-8.4	<2	LOW	.24	1	8	1-3		
9-15	18-35		0.6-2.0	0.05-0.12	7.9-9.0	<2	LOW	.20					
15													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		7-20	HARD	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7% GR,CN,CNV,GRV: SEVERE-DEPTH TO ROCK 7+%GR,CN,CNV,GRV: SEVERE-DEPTH TO ROCK,SLOPE 0-7% CB: SEVERE-DEPTH TO ROCK,LARGE STONES 7+% CB: SEVERE-DEPTH TO ROCK,SLOPE, LARGE STONES
SANITARY LANDFILL (TRENCH)	0-15% GR,CN,CNV,GRV: SEVERE-DEPTH TO ROCK 15+%GR,CN,CNV,GRV:SEVERE-DEPTH TO ROCK,SLOPE 0-15% CB: SEVERE-DEPTH TO ROCK,LARGE STONES 15+% CB: SEVERE-DEPTH TO ROCK,SLOPE, LARGE STONES
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM,SMALL STONES 15+%: POOR-AREA RECLAIM,SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	GR,CN,CNV,GRV: MODERATE-SEEPAGE,PIPING, LARGE STONES CB: SEVERE-LARGE STONES
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	LARGE STONES,DROUGHTY,DEPTH TO ROCK
TERRACES AND DIVERSIONS	0-8%: LARGE STONES,DEPTH TO ROCK 8+%: SLOPE,LARGE STONES,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: LARGE STONES,DROUGHTY 8+%: LARGE STONES,SLOPE,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	CB,GR,CN: SEVERE-THIN LAYER CNV,GRV: SEVERE-SMALL STONES,THIN LAYER

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15% GR,CN,CNV,GRV: SLIGHT 15-25% GR,CN,CNV,GRV: MODERATE-SLOPE 0-15% CB: MODERATE-LARGE STONES 15-25% CB: MODERATE-LARGE STONES,SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	7S															
3+%	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ANTELOPE BITTERBRUSH	PUTR2	5
BIG SAGEBRUSH	ARTR2	5
BLUEBUNCH WHEATGRASS	AGSP	10
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
IDAHO FESCUE	FEID	10
LETTERMAN NEEDLEGRASS	STLE4	5
LOW RABBITBRUSH	CHVIP2	5
CURLLEAF MOUNTAINMAHOGANY 1/	CELE3	5
NEEDLELEAF SEDGE 1/	CAEL2	5
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
SPIKE-FESCUE	HEKI	5
THICKSPIKE WHEATGRASS	AGDA	15
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1700
NORMAL YEARS		1400
UNFAVORABLE YEARS		1000

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

SOIL SURVEY INTERPRETATIONS

MLRA(S): 58
JFY-FS, 1-75
LITHIC LSTIC TORRIORTHENTS, LOAMY-SKELETAL, MIXED (CALCAREOUS), MESIC

SUNUP SERIES

THE SUNUP SERIES ARE WELL TO SOMEWHAT EXCESSIVELY-DRAINED SOILS FORMED IN RESIDUUM FROM SHALE OR INTERBEDDED SLATE AND SANDSTONE ON UPLANDS. SLOPES ARE 5 TO 50 PERCENT. ELEVATION IS 5,000 TO 6,500 FEET. PPT IS ABOUT 12 INCHES. MAST IS ABOUT 50 F., AND THE FFS IS 95 TO 110 DAYS. TYPICALLY, THE PROFILE IS LIGHT BROWNISH-GRAY TO OLIVE CHANNERY CLAY LOAM UNDERLAIN BY BEDROCK AT A DEPTH OF 14 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-14 14	CN-CL BR	GC	A-2, A-6	5-20	45-65	40-65	35-60	30-50	30-40	10-15

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY: STEEL	CORROSIVITY: CONCRETE	EROSION FACTORS: K	EROSION FACTORS: T	WIND EROD. GROUP
0-14 14	0.6-2.0	0.05-0.12	7.9-9.0	<2	LOW	HIGH	LOW	.24	1	4L

FLOODING: FREQUENCY	FLOODING: DURATION	FLOODING: MONTHS	HIGH WATER TABLE: DEPTH (FT)	HIGH WATER TABLE: KIND	HIGH WATER TABLE: MONTHS	CEMENTED PAN: DEPTH (IN)	CEMENTED PAN: HARDNESS	BEDROCK: DEPTH (IN)	BEDROCK: HARDNESS	SUBSIDENCE: INIT. (IN)	SUBSIDENCE: TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	HARD	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	5-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	5-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	5-25%: SEVERE-DEPTH TO ROCK 25+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	5-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	5-15%: POOR-THIN LAYER,SMALL STONES 15+%: POOR-SLOPE,THIN LAYER,SMALL STONES

SOURCE MATERIAL

ROADFILL	5-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	5-15%: POOR-SMALL STONES,AREA RECLAIM 15+%: POOR-SLOPE,SMALL STONES,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK,SEEPAGE
EMBANKMENTS DIKES AND LEVEES	THIN LAYER
EXCAVATED PONDS AQUIFIER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	5-10%: DEPTH TO ROCK 10+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	5-10%: ROOTING DEPTH 10+%: SLOPE,ROOTING DEPTH

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	5-15%: SEVERE-DEPTH TO ROCK,SMALL STONES 15+%: SEVERE-SLOPE,DEPTH TO ROCK,SMALL STONES
DWELLINGS WITHOUT BASEMENTS	5-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	5-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	5-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	5-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	5-8%: MODERATE-TOO CLAYEY, SMALL STONES 8-15%: MODERATE-SLOPE, TOO CLAYEY, SMALL STONES 15+%: SEVERE-SLOPE	PLAYGROUNDS	5-6%: SEVERE-DEPTH TO ROCK, SMALL STONES 6+%: SEVERE-SLOPE, DEPTH TO ROCK, SMALL STONES
PICNIC AREAS	5-8%: MODERATE-TOO CLAYEY, SMALL STONES 8-15%: MODERATE-SLOPE, TOO CLAYEY, SMALL STONES 15+%: SEVERE-SLOPE	PATHS AND TRAILS	5-15%: MODERATE-TOO CLAYEY, SMALL STONES 15-25%: MODERATE-SLOPE, TOO CLAYEY, SMALL STONES 25+%: SEVERE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORC SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS									POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	POOR	-	-	POOR	V. POOR	V. POOR	V. POOR	-	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	5
BLUEBUNCH WHEATGRASS	AGSP	20
BLUE GRAMA	BOGR2	10
CUSICK BLUEGRASS	POCU3	5
GREEN NEEDLEGRASS	STVI4	15
NEEDLELEAF SEDGE 1/	CAEL2	5
WESTERN WHEATGRASS	AGSM	25
OTHER PERENNIAL GRASSES	PPGG	10
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1200
NORMAL YEARS		900
UNFAVORABLE YEARS		450

FOOTNOTES

1 NOT USUALLY UTILIZED BY LIVESTOCK.

NE0086 SOIL INTERPRETATIONS RECORD

ALRA(S): 60A, 64, 66, 67, 71, 72
REV. JID-DAY, 7-81
JSTIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), MESIC, SHALLOW

TASSEL SERIES

THE TASSEL SERIES CONSISTS OF SHALLOW, WELL AND SOMEWHAT EXCESSIVELY DRAINED SOILS FORMED IN MATERIAL WEATHERED FROM SANDSTONE ON UPLANDS. THE SURFACE LAYER IS LIGHT BROWNISH GRAY FINE SANDY LOAM 8 INCHES THICK. THE SUBSTRATUM IS 7 INCHES OF LIGHT GRAY FINE SANDY LOAM OVER LIGHT GRAY SOFT SANDSTONE. SLOPES RANGE FROM 0 TO 60 PERCENT. RANGELAND IS TH MAIN USE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-8	LFS, LS	SM	A-2	0	95-100	90-100	65-85	15-30	-	NP
0-8	FSL, LVFS, VFSL	ML, SM	A-4	0	95-100	90-100	75-100	40-65	<35	NP-7
8-15	FSL, LVFS, LFS	ML, SM	A-4	0	95-100	90-100	75-95	40-65	<35	NP-7
15-60	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-8	2-9	1.60-1.90	5.0-20	0.10-0.12	7.4-8.4	-	LOW	.17	2	2	.5-1	HIGH	LOW
0-8	5-12	1.50-1.75	2.0-6.0	0.16-0.19	7.4-8.4	-	LOW	.24	2	3	.5-1		
8-15	5-12	1.50-1.75	2.0-6.0	0.15-0.17	7.4-8.4	-	LOW	.24					
15-60													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYDROLOGIC GRP	POTENTIAL FROST ACTION
NONE			>6.0			-	-	6-20	SOFT	-	-	D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE,DEPTH TO ROCK 7+%: SEVERE-SEEPAGE,DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% FSL,VFSL: SOIL BLOWING,DEPTH TO ROCK 3+%FSL,VFSL:SOIL BLOWING,DEPTH TO ROCK,SLOPE LFS,LS,LVFS: FAST INTAKE,SOIL BLOWING
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK,SOIL BLOWING 8+%: SLOPE,DEPTH TO ROCK,SOIL BLOWING
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	0-9%: MODERATE-DEPTH TO ROCK 9-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-DEPTH TO ROCK 4-9%: MODERATE-SLOPE,DEPTH TO ROCK 9+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-4%: MODERATE-DEPTH TO ROCK 4-15%: MODERATE-DEPTH TO ROCK,SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	0-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	0-15%: SLIGHT 15-25%: MODERATE-SLOPE 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY													
	IMPR	IRR.	IMPR	IRR.	IMPR	IRR.	IMPR	IRR.	IMPR	IRR.	IMPR	IRR.	IMPR	IRR.
0-30%	6S													
30+%	7S													

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORTLY.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS (A)

CLASS-DETERMIN*G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-25%	POOR	POOR	POOR	FAIR	FAIR	POOR	V. POOR	V. POOR	POOR	FAIR	V. POOR	POOR
25+%	V. POOR	V. POOR	POOR	FAIR	FAIR	POOR	V. POOR	V. POOR	V. POOR	FAIR	V. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (B)

COMMON PLANT NAME	PLANT SYMBOL (ALSPV)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
NEEDLEANDTHREAD	STCO4	20
LITTLE BLUESTEM	ANSC2	15
THREADLEAF SEDGE	CAFI	15
PRAIRIE SANDREED	CALO	10
SAND BLUESTEM	ANHA	10
BLUE GRAMA	BOGR2	5
SIDEOATS GRAMA	BOCU	5
PLAINS MUHLY	MUCU3	5
OTHER SHRUBS	SSSS	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS		1500
NORMAL YEARS		1300
UNFAVORABLE YEARS		700

FOOTNOTES

1 POLLUTION OF UNDERGROUND WATER IS POSSIBLE
A WINDBREAK GROUP 10.
B SHALLOW LIMY RANGE SITE.

CC0193 SOIL INTERPRETATIONS RECORD

MLRA(S): 67, 69, 60, 61
REV. RD, 6-80
USTIC TORRICRTHENTS, FINE-LOAMY, MIXED (CALCARECUS), MESIC

THEDALUND SERIES

THE THEDALUND SERIES CONSIST OF MODERATELY DEEP WELL DRAINED SCILS FORMED IN CALCAREOUS RESIDUUM WEATHERED FROM SOFT SHALE AND SANDSTONE ON UPLANDS. TYPICALLY THE SURFACE LAYER IS A LIGHT CLAY LOAM OR LOAM ABOUT 4 INCHES THICK. THE UNDERLYING SOIL IS ALSO A LIGHT CLAY LOAM OR LOAM AND RESTS ON SHALE AT A DEPTH OF 30 INCHES. NATURAL VEGETATION IS MOSTLY GRASS. AVERAGE ANNUAL PRECIPITATION IS ABOUT 15 INCHES AND FROST FREE SEASON IS ABOUT 150 DAYS. SLOPES ARE 0 TO 50 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	CL, L, VFSL	CL-ML, CL, SM-SC, SC	A-4	0-5	80-100	75-100	70-95	40-75	20-30	5-10
4-30	CL, L, SCL	CL-ML, CL, SM-SC, SC	A-6, A-4	0-5	80-100	75-100	70-95	40-80	25-35	5-15
30	WB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	15-25		0.6-2.0	0.16-0.18	7.9-8.4	-	LOW	.32	2	4L	.5-2	HIGH	LOW
4-30	19-35		0.6-2.0	0.16-0.18	7.9-8.4	<8	MODERATE	.37					
30													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			2.5+0			-		20-40	SOFT	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	0-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	0-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	0-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-DEPTH TO ROCK,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SHRINK-SWELL,SLOPE 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: MODERATE-DEPTH TO ROCK,SHRINK-SWELL 8-15%: MODERATE-DEPTH TO ROCK,SLOPE, SHRINK-SWELL 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: MODERATE-SHRINK-SWELL 8-15%: MODERATE-SLOPE,SHRINK-SWELL 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: MODERATE-THIN LAYER 8-15%: MODERATE-SLOPE,THIN LAYER 15+%: SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	0-25%: POOR-AREA RECLAIM 25+%: POOR-AREA RECLAIM,SLOPE
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	0-15%: POOR-SMALL STONES 15+%: POOR-SMALL STONES,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: MODERATE-SEEPAGE,DEPTH TO ROCK 3-8%: MODERATE-SEEPAGE,DEPTH TO ROCK,SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: DEPTH TO ROCK,EXCESS SALT 3+%: DEPTH TO ROCK,SLOPE,EXCESS SALT
TERRACES AND DIVERSIONS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK
GRASSED WATERWAYS	0-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8% CL: SLIGHT 8-15% CL: MODERATE-SLOPE 0-8% L.VFSL: MODERATE-DUSTY 8-15% L.VFSL: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES, DEPTH TO ROCK 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8% CL: SLIGHT 8-15% CL: MODERATE-SLOPE 0-8% L.VFSL: MODERATE-DUSTY 8-15% L.VFSL: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	0-15% CL: SLIGHT 15-25% CL: MODERATE-SLOPE 0-15% L.VFSL: MODERATE-DUSTY 15-25% L.VFSL: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		CORN (BU)		CORN SILAGE (TONS)		SUGAR BEETS (TONS)		ALFALFA HAY (TONS)		WHEAT (BU)		BARLEY (BU)			
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	4E	4S		100		30		25		4.0	20		20			
3-9%	6E	4E		80		25		20		3.0						
9+%	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
WARM	RUSSIAN-OLIVE	16	ROCKY MT. JUNIPER	12	PONDEROSA PINE	18	EASTERN REDCEDAR	12
	SIBERIAN ELM	25						
COOL	RUSSIAN-OLIVE	10	ROCKY MT. JUNIPER	8	GREEN ASH	16	SIBERIAN PEASHRUB	10
	CHINESE ELM	25						

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: COOL	WARM				
BLUE GRAMA	BOGR2	50	40				
BUFFALOGRASS	BUDA	5	5				
WESTERN WHEATGRASS	AGSM	10	5				
NEEDLEANDTHREAD	STCO4	5	-				
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5	-				
RED THREEAWN	ARLO3	5	-				
SAND DROPSEED	SPCR	2	5				
SEDGE	CAREX	5	-				
FOURWING SALTBUSH	ATCA2	3	5				
SIDEOATS GRAMA	BOCU	10	5				
GALLETA	HIJA	-	20				
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		1600	1500				
NORMAL YEARS		1100	800				
UNFAVORABLE YEARS		800	200				

FOOTNOTES

1 WINDBREAKS SELDOM SURVIVE

SOIL SURVEY INTERPRETATIONS

MLRA(S): 32, 34, 46
JFY, 2-78
USTIC TORRIORTHENTS, LOAMY, MIXED (CALCAREOUS), FRIGID, SHALLOW

THERMOPOLIS SERIES

THE THERMOPOLIS SERIES ARE WELL-DRAINED SOILS FORMING IN RESIDIUM FROM REDDISH SILTSTONE ON MODERATELY TO STEEPLY-SLOPING HILLS AND RIDGES. SLOPES ARE 2 TO 30 PERCENT. ELEVATION IS 4500 TO 7200 FEET. MAST IS 45 F. PPT IS ABOUT 14 INCHES. TYPICALLY, THE PROFILE IS REDDISH-BROWN LOAM, ABOUT 15 INCHES THICK, UNDERLAIN BY SILTSTONE.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USCA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	L	ML	A-4	0	80-100	80-100	70-90	50-70	15-25	NP-5
4-15	L	ML	A-4	0	80-100	80-100	70-90	50-70	15-25	NP-5
15	WE									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-4	0.6-2.0	0.15-0.18	7.4-8.4	<4	LOW	HIGH	HIGH	.43	2	4L
4-15	0.6-2.0	0.15-0.18	7.4-8.4	<4	LOW	HIGH	HIGH	.55		
15										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	RIPPABLE	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	2-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (TRENCH)	2-25%: SEVERE-DEPTH TO ROCK 25+%: SEVERE-SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	2-15%: POOR-THIN LAYER,AREA RECLAIM 15+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	2-8%: MODERATE-DEPTH TO ROCK 8-15%: MODERATE-SLOPE,DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITHOUT BASEMENTS	2-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, LOW STRENGTH 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	2-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, LOW STRENGTH 15+%: SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	2-4%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 4-8%: MODERATE-SLOPE,DEPTH TO ROCK, LOW STRENGTH 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	2-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, LOW STRENGTH 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	2-25%: POOR-THIN LAYER,AREA RECLAIM 25+%: POOR-SLOPE,THIN LAYER,AREA RECLAIM
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	2-15%: POOR-AREA RECLAIM 15+%: POOR-SLOPE,AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH,PIPING,THIN LAYER
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	2-10%: DEPTH TO ROCK,ERODES EASILY 10+%: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	2-10%: ROOTING DEPTH,ERODES EASILY 10+%: SLOPE,ROOTING DEPTH,ERODES EASILY

REGIONAL INTERPRETATIONS

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RECREATION

CAMP AREAS	2-8%: MODERATE-DUSTY 8-15%: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PLAYGROUNDS	2-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	2-8%: MODERATE-DUSTY 8-15%: MODERATE-SLOPE,DUSTY 15+%: SEVERE-SLOPE	PATHS AND TRAILS	2-15%: MODERATE-DUSTY 15-25%: MODERATE-SLOPE,DUSTY 25+%: SEVERE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		GRASS HAY (TONS)		PASTURE (AUM)											
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
2-15%	7E	6E	-	1.5	-	3										
15+%	7E	-	-	-	-	-										

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
IRR	V. POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	POOR	-	V. POOR	-
NIRR	V. POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL					
BIG SAGEBRUSH	ARTR2	5					
BLUEBUNCH WHEATGRASS	AGSP	40					
INDIAN RICEGRASS	ORHY	10					
NEEDLEANDTHREAD	STCO4	15					
PRAIRIE JUNEGRASS	KOCR	5					
WESTERN WHEATGRASS	AGSM	10					
OTHER PERENNIAL GRASSES	PFGG	5					
OTHER SHRUBS	SSSS	10					
POTENTIAL PRODUCTION (LBS./AC. DRY WT):							
FAVORABLE YEARS		700					
NORMAL YEARS		500					
UNFAVORABLE YEARS		350					

FOOTNOTES

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

(1)

SCS-SOI-5
7-81

SOIL INTERPRETATIONS RECORD

KEYING ONLY: RECORD NO. | CONTROL WORD NO. | MLRA 001 | STATE 01T

MLRA(S) 34, 58 | KIND OF UNIT SUBORDER | UNIT NAME TYPIC TORRIORTHENTS
STATE WYOMING | RECORD NO. | AUTHOR(S) RJL | DATE 6-82 | REVISED | UNIT MODIFIER SALINE

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS 021 / DESCR 031: TYPIC TORRIORTHENTS, SALINE ARE DEEP, POORLY DRAINED SOILS. THEY FORMED ON ALLUVIAL FANS FROM SLOPE WASH ALLUVIUM DERIVED FROM ALKALINE SHALE. ELEVATION IS 5800 TO 6100 FEET. MAP IS 5 TO 9 IN. MAAT IS 45 TO 48° F. FFS IS 100 to 120 DAYS. TYPICALLY THE SURFACE LAYER IS VERY PALE BROWN FINE SANDY LOAM ABOUT 2 INCHES THICK. THE UNDERLYING MATERIAL IS VERY STRONGLY ALKALINE, STRONGLY SALINE, STRATIFIED YELLOWISH BROWN CLAY LOAM AND SANDY CLAY LOAM TO 60 INCHES OR MORE. SLOPES RANGE FROM 0 TO 3 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE DEPTH (IN)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041	0-2	FSL, L	ML-CL, CL	A-2, A-4	0	80-100	85-100	60-100	30-90	20-35	5-15
	2-60	ST - CL - SCL	CL	A-6, A-7	0	80-100	90-100	60-100	40-80	30-35	10-15

	DEPTH (IN)	CLAY (PCT OF <2MM)	MOIST BULK DENSITY (G/CM^3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
PROP 051	SAME DEPTH AS ABOVE	10-27	-	0.6-2.0	0.04-0.07	7.9-8.4	> 16	LOW	.28	1	3	0.5-1.0	HIGH	HIGH
		20-35	-	0.2-0.6	0.05-0.10	> 9.0	> 16	MODERATE	.32					

	FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INITIAL (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	OCCASIONAL	BRIEF	MAR-SEP	0.5-3.0	APPARENT	FEB-JUL	-		60	-	-		D	MODERATE

SANITARY FACILITIES

	FOOTNOTES	
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	SEVERE - WETNESS, FLOODS
LAGOON 081	SEWAGE LAGOONS	SEVERE - WETNESS, FLOODS
TRENCH 091	SANITARY LANDFILL (TRENCH)	SEVERE - WETNESS, FLOODS
SANARE 101	SANITARY LANDFILL (AREA)	SEVERE - WETNESS, FLOODS
COVER 111	DAILY COVER FOR LANDFILL	SEVERE - WETNESS, EXCESS SALT, EXCESS SODIUM

BUILDING SITE DEVELOPMENT

	FOOTNOTES	
EXCAV 121	SHALLOW EXCAVATIONS	SEVERE - WETNESS
DWEL 131	DWELLINGS WITHOUT BASEMENTS	SEVERE - WETNESS, FLOODS
DWEL 141	DWELLINGS WITH BASEMENTS	SEVERE - WETNESS, FLOODS
BLDGS 151	SMALL COMMERCIAL BUILDINGS	SEVERE - WETNESS, FLOODS
ROADS 161	LOCAL ROADS AND STREETS	SEVERE - WETNESS, FLOODS
LAWNS 171	LAWNS, LANDSCAPING, AND GOLF FAIRWAYS	SEVERE - EXCESS SALTS, EXCESS SODIUM, WETNESS

CONSTRUCTION MATERIAL

KEYING ONLY	FOOTNOTES	
FILL 191	ROADFILL	POOR - SHRINK-SWELL, LOW STRENGTH
SAND 201	SAND	IMPROBABLE - EXCESS FINES
GRAVEL 211	GRAVEL	IMPROBABLE - EXCESS FINES
SOIL 221	TOPSOIL	POOR - EXCESS SALT, EXCESS SODIUM

WATER MANAGEMENT

	FOOTNOTES	
PONDRS 231	POND RESERVOIR AREA	SLIGHT
DIKES 241	EMBANKMENTS DIKES AND LEVEES	MODERATE - PIPING
PONDAQ 251	EXCAVATED PONDS AQUIFER FED	SEVERE - SALTY WATER
DRAIN 261	DRAINAGE	EXCESS SALT, EXCESS SODIUM
IRRIG 271	IRRIGATION	WETNESS, EXCESS SODIUM, EXCESS SALT
TERRAC 281	TERRACES AND DIVERSIONS	WETNESS
WATERW	GRASSED WATERWAYS	WETNESS, EXCESS SALT, EXCESS SODIUM

REGIONAL INTERPRETATIONS

	FOOTNOTES	
REGION 181		

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KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: TYPIC TORRIORTHENTS — RECREATIONAL DEVELOPMENT
UNIT MODIFIER: SALINE

		FOOTNOTE	KEYING ONLY			FOOTNOTE
CAMPS	301	SEVERE - FLOOD, WETNESS	PLAYGD	321	PLAYGROUNDS	SEVERE - EXCESS SODIUM, EXCESS SALT
CAMP AREAS	2–5			2–5		
PICNIC	311	SEVERE - EXCESS SALT, EXCESS SODIUM	PATHS	331	PATHS AND TRAILS	SEVERE - WETNESS
PICNIC AREAS	2–5			2–5		

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

		FOOTNOTE	CLASS-DETERMINING PHASE	CAPABILITY															
CROPHD	451			NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
CROPS	341		ALL	6W															
	2–8																		
	9																		
	351																		
	2–3																		

WOODLAND SUITABILITY

		FOOTNOTE	CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
					EROSION HAZARD	EQUIP LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDEX	
WOODS	361		-									
	2–9											
	371											
	2–6											

WINDBREAKS

		FOOTNOTE	CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
WINDBK	381		-								
	2–6										

WILDLIFE HABITAT SUITABILITY

		FOOTNOTE	CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
				GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
WILDLF	391		ALL	POOR	POOR	V. POOR	-	-	V. POOR	POOR	FAIR	POOR	-	FAIR	V. POOR
	2–6														

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

		FOOTNOTE	COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS-DETERMINING PHASE				
PHASE	401								
PLANT	411		WESTERN WHEATGRASS	AOSM					
	2		ALKALI SACATON	SPAI					
	3		BASIN WILDRYE	ELCI2					
	4		BOTTLEBRUSH SQUIRRELTAIL	SIHY					
	5		INDIAN RICEGRASS	ORHY					
	6		INLAND SALTGRASS	DIST					
	7		MILKVETCH	A STRA					
	8		GREASEWOOD	SARCB					
	9								
	421								
	2–6								
			POTENTIAL PRODUCTION (LBS./AC. DRY WT):						
PRODUC	431		FAVORABLE YEARS		2000				
	2		NORMAL YEARS		1200				
	3		UNFAVORABLE YEARS		800				

		SYM.	FOOTNOTES
NOTES	441		
	2–7		

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SOIL INTERPRETATIONS RECORD

MLRA(S): 37, 34
REV. JER.AJE. 7-81
TYPIC NATRARGIDS, FINE-LOAMY, MIXED, MESIC

UFFENS SERIES
ELEVATION>5500

THE UFFENS SERIES CONSISTS OF DEEP, WELL DRAINED SODIUM AFFECTED SOILS FORMED IN ALLUVIUM FROM WEATHERED SHALE ON UPLAND VALLEY BOTTOMS, SIDE SLOPES, ALLUVIAL FANS AND SWALES. ELEVATIONS RANGE 5600 TO 6400 FEET. A.A.P. RANGES 6 TO 10 INCHES. A.A.A.T. RANGES 51 TO 55 F. A.F.F.S. RANGES 140 TO 160 DAYS. TYPICALLY, THE SURFACE IS A PALE BROWN AND LIGHT YELLOWISH BROWN VERY FINE SANDY LOAM 9 INCHES THICK. THE SUBSOIL IS BROWN AND LIGHT BROWN CLAY LOAM 11 INCHES THICK. THE SUBSTRATUM IS PALE BROWN SANDY CLAY LOAM TO 60 INCHES. SLOPES RANGE FROM 0 TO 8 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-9	FSL, VFSL	SM, ML, CL-ML, SM-SC	A-4	0	100	100	80-90	45-55	20-30	NP-10
0-9	SCL, L, SIL	CL, CL-ML	A-6, A-4	0	100	100	85-95	55-75	25-35	5-15
9-20	SCL, CL, SICL	CL	A-6	0	100	100	85-95	65-85	30-40	10-20
20-60	SCL, L, CL	CL	A-6	0	100	100	85-95	55-75	30-40	10-15

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-9	10-20	1.30-1.40	2.0-6.0	0.08-0.14	7.4-8.4	4-8	LOW	.20	1	3	.5-1	HIGH	HIGH
0-9	15-25	1.20-1.30	0.6-2.0	0.13-0.16	>7.3	4-8	LOW	.28	1	6	.5-1		
9-20	25-35	1.20-1.30	0.2-0.6	0.05-0.10	>8.4	>16	MODERATE	.32					
20-60	20-30	1.20-1.35	0.2-0.6	0.05-0.10	>7.8	>16	MODERATE	.28					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	WTD GRP	POTENTIAL FROST ACTION
NONE			>60.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-EXCESS SALT
SANITARY LANDFILL (AREA)	SLIGHT
DAILY COVER FOR LANDFILL	GOOD

CONSTRUCTION MATERIAL

ROADFILL	FAIR-LOW STRENGTH,SHRINK-SWELL
SAND	INFEASIBLE-EXCESS FINES
GRAVEL	INFEASIBLE-EXCESS FINES
TOPSOIL	POOR-EXCESS SODIUM

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-EXCESS SODIUM,EXCESS SALT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% SCL,L,SIL: DROUGHTY 3+% SCL,L,SIL: DROUGHTY,SLOPE 0-3% FSL,VFSL: DROUGHTY,SOIL BLOWING 3+% FSL,VFSL: DROUGHTY,SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	SCL,L,SIL: FAVORABLE FSL,VFSL: SOIL BLOWING
GRASSED WATERWAYS	EXCESS SALT,EXCESS SODIUM,DROUGHTY

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SLIGHT
DWELLINGS WITHOUT BASEMENTS	MODERATE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	MODERATE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-4%: MODERATE-SHRINK-SWELL 4-8%: MODERATE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	MODERATE-LOW STRENGTH,SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	SEVERE-EXCESS SODIUM

REGIONAL INTERPRETATIONS

UFFENS SERIES
ELEVATION>5500

UT0668

RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-EXCESS SODIUM	PLAYGROUNDS	0-6%: SEVERE-EXCESS SODIUM 6+%: SEVERE-SLOPE,EXCESS SODIUM
PICNIC AREAS	SEVERE-EXCESS SODIUM	PATHS AND TRAILS	FSL,SCL: SLIGHT VFSL,L,SIL: MODERATE-DUSTY

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7S																

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	MAP SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	V. POOR	-	-	V. POOR	POOR	V. POOR	V. POOR	-	V. POOR	V. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: FSL,VFSL
ALKALI SACATON	SPAI	20
WESTERN WHEATGRASS	AGSM	10
GALLETA	HIJA	15
BLACK GREASEWOOD	SAVE4	15
BIG SAGEBRUSH	ARTR2	5
SHADSCALE	ATCO	5
FOURWING SALTBUSH	ATCA2	10
NEEDLEANDTHREAD	STCO4	5
BLUE GRAMA	BOGR2	5
WINTERFAT	EULA5	5
BLACK SAGEBRUSH	ARARN	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS		900
NORMAL YEARS		650
UNFAVORABLE YEARS		400

FOOTNOTES

MLRA(S): 34
WRG/JFY, 11-74
ARIDIC ARGIECROLLS, FINE, MONTMORILLONITIC

ULRIC SERIES

THE ULRIC SERIES ARE WELL-DRAINED SOILS FORMED IN AEOLIAN DEPOSITS OVER SHALE ON LEEWARD HILLSIDES. SLOPES ARE 3 TO 40 PERCENT. PRECIPITATION IS 10 TO 14 INCHES. THE MEAN ANNUAL SOIL TEMPERATURE IS 42 TO 47 F. TYPICALLY, THE SURFACE LAYER IS GRAYISH-BROWN LOAM, ABOUT 2 INCHES THICK. THE UPPER SUBSOIL LAYER IS BROWN SANDY CLAY LOAM, ABOUT 7 INCHES THICK. THE MIDDLE SUBSOIL LAYER IS PALE BROWN CLAY, ABOUT 12 INCHES THICK. THE LOWER SUBSOIL LAYER IS PALE BROWN CHANNERY CLAY, ABOUT 6 IN THICK. THE SUBSTRATUM IS VERY PALE BROWN CHANNERY CLAY LOAM ABOUT 15 IN. THICK. SOFT SHALE IS AT 42 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-9	L, SCL	SC, CL	A-6	0	85-100	85-100	70-90	40-70	30-40	15-20
9-21	C	CL, CH	A-7	0	85-100	85-100	80-100	65-95	45-65	20-35
21-42	CN-C, CN-CL	GC, CL	A-6, A-7	0	55-80	50-75	45-70	40-70	35-50	15-25
42	WE									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND ERODIBILITY GROUP
0-9	0.2-0.6	0.14-0.16	6.6-7.8	-	MODERATE	MODERATE	LOW	.32	2	5
9-21	0.2-0.6	0.14-0.16	6.6-7.8	-	HIGH	HIGH	LOW	.24		
21-42	0.2-0.6	0.11-0.16	7.9-9.0	2-4	HIGH	HIGH	MODERATE	.28		
42										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		40-60	RIPPABLE	-		C	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	3-15%: SEVERE-PERCS SLOWLY 15+%: SEVERE-PERCS SLOWLY,SLOPE
SEWAGE LAGOON AREAS	3-7%: MODERATE-DEPTH TO ROCK 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	3-25%: SEVERE-TOO CLAYEY,DEPTH TO ROCK 25+%: SEVERE-TOO CLAYEY,SLOPE,DEPTH TO ROCK
SANITARY LANDFILL (AREA)	3-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	3-15%: POOR-TOO CLAYEY 15+%: POOR-TOO CLAYEY,SLOPE

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	3-15%: SEVERE-TOO CLAYEY 15+%: SEVERE-TOO CLAYEY,SLOPE
DWELLINGS WITHOUT BASEMENTS	3-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
DWELLINGS WITH BASEMENTS	3-15%: SEVERE-SHRINK-SWELL 15+%: SEVERE-SHRINK-SWELL,SLOPE
SMALL COMMERCIAL BUILDINGS	3-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL,SLOPE
LOCAL ROADS AND STREETS	3-15%: SEVERE-SHRINK-SWELL,LOW STRENGTH 15+%: SEVERE-SHRINK-SWELL,LOW STRENGTH,SLOPE

REGIONAL INTERPRETATIONS

SOURCE MATERIAL

ROADFILL	3-25%: POOR-SHRINK-SWELL,LOW STRENGTH 25+%: POOR-SHRINK-SWELL,LOW STRENGTH,SLOPE
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	3-15%: FAIR-TOO CLAYEY,THIN LAYER 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	SLOPE
EMBANKMENTS DIKES AND LEVEES	COMPRESSIBLE,SLOPE,LOW STRENGTH
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	
IRRIGATION	
TERRACES AND DIVERSIONS	3-10%: ERODES EASILY,PERCS SLOWLY 10+%: ERODES EASILY,PERCS SLOWLY,SLOPE
GRASSED WATERWAYS	3-10%: ERODES EASILY,PERCS SLOWLY 10+%: SLOPE,ERODES EASILY,PERCS SLOWLY

RECREATION

CAMP AREAS	8-15% L: MODERATE-SLOPE,PERCS SLOWLY 15+%: SEVERE-SLOPE 3-8% L: MODERATE-PERCS SLOWLY 3-8% SCL: MODERATE-PERCS SLOWLY,TCC CLAYEY 8-15% SCL: MODERATE-SLOPE,PERCS SLOWLY,	PLAYGROUNDS	3-6% L: MODERATE-SLOPE,PERCS SLOWLY 6+%: SEVERE-SLOPE 3-6% SCL: MODERATE-SLOPE,PERCS SLOWLY, TCC CLAYEY
PICNIC AREAS	8-15% L: MODERATE-SLOPE 15+%: SEVERE-SLOPE 3-8% L: SLIGHT 3-8% SCL: MODERATE-TCC CLAYEY 8-15% SCL: MODERATE-SLOPE,TCC CLAYEY	PATHS AND TRAILS	3-15% L: SLIGHT 15-25% L: MODERATE-SLOPE 25+%: SEVERE-SLOPE 3-15% SCL: MODERATE-TCC CLAYEY 15-25% SCL: MODERATE-SLOPE,TOO CLAYEY

CAPABILITY AND PRECISION YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	POOR	POOR	FAIR	-	-	FAIR	-	-	POOR	-	-	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSEN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE	
		3-30%	30+%
BIG SAGEBRUSH	ARTR2	15	10
BLUEBUNCH WHEATGRASS	AGSP	10	15
CANBY BLUEGRASS	POCA	10	-
INDIAN RICEGRASS	OFHY	5	-
LETTERMAN NEEDLEGRASS	STLE4	10	5
NEEDLEANDTHREAD	STCO4	15	-
PRAIRIE JUNEGRASS	KOCR	5	5
THICKSPIKE WHEATGRASS	AGDA	20	30
SANDBERG BLUEGRASS	POSE	-	5
SERVICEBERRY	AMELA	-	5
SNOWBERRY	SYMPH	-	5
SPIKE FESCUE	HEKI	-	10
OTHER PERENNIAL GRASSES	PPGG	10	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
FAVORABLE YEARS		1500	1600
NORMAL YEARS		1200	1200
UNFAVORABLE YEARS		700	900

FOOTNOTES

C00052 SOIL INTERPRETATIONS RECORD

MLRA(S): 67, 72, 60, 61, 69 VONA SERIES
REV. RD. 3-79
USTOLLIC HAPLARGIDS, COARSE-LOAMY, MIXED, MESIC

THE VONA SERIES CONSISTS OF DEEP WELL DRAINED SOILS ON UPLANDS AND HIGH TERRACES. THEY HAVE FORMED IN EOLIAN OR PARTLY WIND REWORKED ALLUVIAL PARENT MATERIALS. NATIVE VEGETATION CONSISTS OF SHORT AND TALL GRASS ASSOCIATIONS. TYPICALLY THESE SOILS HAVE A SANDY LOAM SURFACE LAYER ABOUT 8 INCHES THICK. THE SUBSOIL IS ALSO A SANDY LOAM AND IS ABOUT 22 INCHES THICK. THE SUBSTRATUM IS A LOAMY SAND OR SANDY LOAM TO 60 INCHES OR MORE. AVERAGE ANNUAL PRECIPITATION IS ABOUT 14 INCHES AND FROST FREE SEASON ABOUT 150 DAYS. SLOPES RANGE FROM 0 TO 15 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-8	SL, FSL	SM	A-2, A-4	0	100	90-100	60-90	30-45	-	NP
0-8	LFS, LS	SM	A-2	0	100	90-100	60-90	15-30	-	NP
8-30	FSL, SL	SM	A-2, A-4	0	100	90-100	60-90	30-45	-	NP
30-60	SL, LS	SM	A-2	0	100	90-100	50-85	15-30	-	NP

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-8	5-10		2.0-6.0	0.11-0.13	6.6-7.8	<2	LOW	.20	5	3	.5-1	HIGH	LOW
0-8	3-8		6.0-20	0.09-0.11	6.6-7.8	<2	LOW	.15	5	2	.5-1		
8-30	10-18		2.0-6.0	0.12-0.14	6.6-8.4	<4	LOW	.24					
30-60	3-15		6.0-20	0.08-0.11	7.9-9.0	<4	LOW	.20					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-POOR FILTER
SEWAGE LAGOON AREAS	0-7%: SEVERE-SEEPAGE 7+%: SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (TRENCH) 1	0-8%: MODERATE-TOO SANDY 8-15%: MODERATE-SLOPE,TOO SANDY
SANITARY LANDFILL (AREA) 1	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL 2	0-8%: FAIR-TOO SANDY 8-15%: FAIR-TOO SANDY,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-CUTBANKS CAVE
DWELLINGS WITHOUT BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DWELLINGS WITH BASEMENTS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT 4-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	GOOD
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL 2	0-8% SL,FSL: FAIR-SMALL STONES 8-15% SL,FSL: FAIR-SMALL STONES,SLOPE 0-8% LFS,LS: FAIR-TOO SANDY,SMALL STONES 8-15% LFS,LS: FAIR-TOO SANDY,SMALL STONES, SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	0-8%: SEVERE-SEEPAGE 8+%: SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-SEEPAGE,PIPING
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3% SL,FSL: SOIL BLOWING 3+% SL,FSL: SOIL BLOWING,SLOPE 0-3% LFS,LS: FAST INTAKE,SOIL BLOWING 3+% LFS,LS: FAST INTAKE,SOIL BLOWING,SLOPE
TERRACES AND DIVERSIONS	0-8%: TOO SANDY,SOIL BLOWING 8+%: SLOPE,TOO SANDY,SOIL BLOWING
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: SLIGHT 2-6%: MODERATE-SLOPE 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		CORN (BU)		CORN SILAGE (TONS)		SUGAR BEETS (TONS)		ALFALFA HAY (TONS)		WHEAT (BU)		BARLEY (BU)		GRAIN SORGHUM (BU)	
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-1% SL.FSL		2S		130		20		19		5	-	55	-	70		70
1-3% SL.FSL	4E	3E		115		18		18		5	18	55	16	70		65
3-6% SL.FSL	6E	3E		100		15		15		4	-	40	-	60		60
1-3% LFS.LS	4E	3E		110		17		15		4.5	13	45	13	50		
3-6% LFS.LS	6E	4E		80		-		-		3.5	-	35	-	45		
6+%	6E	6E		-		-		-		-	-	-	-	-		

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
WARM	ROCKY MT. JUNIPER	15	RUSSIAN-OLIVE	18	HONEYLOCUST	25	COMMON HACKBERRY	25
	EASTERN REDCEDAR	15	PONDEROSA PINE	20	SIBERIAN ELM	30		
COOL	CHINESE ELM	28	GREEN ASH	16	RUSSIAN-OLIVE	12	SIBERIAN PEASHRUB	9
	ROCKY MT. JUNIPER	9						

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
HIGH PPT	FAIR	FAIR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	FAIR
3+% LOW PPT	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	FAIR	-	V. POOR	FAIR
IRR	GOOD	GOOD	-	-	-	-	-	-	GOOD	-	-	-

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION) (2)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE			
		LFS.LS.LOW PPT	SL.FSL.LOW PPT	LFS.LS.HIGH PPT	SL.FSL.HIGH PPT
NEEDLEANDTHREAD	STCO4	5		-	5
LITTLE BLUESTEM	ANSC2	15	5	15	15
SIDEOATS GRAMA	BOCU	10	20	5	5
WESTERN WHEATGRASS	AGSM	7		-	5
PRAIRIE SANDREED	CALO	15	5	20	10
SAND BLUESTEM	ANHA	5		5	0
BLUE GRAMA	BOGR2	13	40	10	20
SAND DROPSEED	SPCR	5	10	5	5
SEDGE	CAREX	5	5	-	-
SWITCHGRASS	PAVI2			5	5
SAND SAGEBRUSH	ARFI2	7		5	-
THICKSPIKE WHEATGRASS	AGDA		5		
POTENTIAL PRODUCTION (LBS./AC. DRY WT):					
FAVORABLE YEARS		1800	1500	2200	2000
NORMAL YEARS		1600	1100	1800	1700
UNFAVORABLE YEARS		1200	600	1400	1400

FOOTNOTES

1 PERMEABILITY NOT A LIMITATION IN SEMIARID AREAS; HOWEVER IN SOME LOCALITIES MAY BE POLLUTION HAZARD.
2 BASED ON AVERAGE OF TOP 40 INCHES
3 NOT USUALLY UTALIZED BY CATTLE OR SHEEP

WY0209

SOIL INTERPRETATIONS RECORD

MLRA(S): 58, 60, 61
REV. JFY-FS, 2-78
LSTOLLIC HAPLARGIDS, FINE, MONTMORILLONITIC, MESIC

WYARNC SERIES

THE WYARNC SERIES ARE WELL-DRAINED SOILS FORMED IN ALLUVIUM ON ALLUVIAL FANS AND SIDE SLOPES. SLOPES ARE 0 TO 15 PERCENT. ELEVATION IS 3,500 TO 5,200 FEET. PPT IS ABOUT 13 INCHES. MAST IS ABOUT 51 F., AND THE FFS IS 105 TO 120 DAYS. TYPICALLY, THE SURFACE LAYER IS GRAYISH-BROWN CLAY LOAM, ABOUT 4 INCHES THICK. THE SUBSOIL IS ABOUT 9 INCHES THICK; THE UPPER 6 INCHES IS BROWN CLAY, AND THE LOWER 3 INCHES IS LIGHT OLIVE BROWN CLAY LOAM. THE SUBSTRATUM IS LIGHT BROWN CLAY LOAM TO 60 INCHES.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	CL	ML	A-6	0	80-100	75-100	70-95	55-75	35-40	10-15
4-60	CL, C	CL	A-7	0	80-100	75-100	75-100	60-80	40-50	20-30

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS I	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-4	27-40		0.6-2.0	0.19-0.21	6.6-7.8	<2	MODERATE	.32	5	6	1-2	HIGH	LOW
4-60	35-50		0.2-0.6	0.14-0.21	7.4-9.0	<2	HIGH	.32					

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		>60		-		B	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-PERCS SLOWLY
SEWAGE LAGOON AREAS	0-2%: SLIGHT 2-7%: MODERATE-SLOPE 7+%: SEVERE-SLOPE
SANITARY LANDFILL (TRENCH)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
SANITARY LANDFILL (AREA)	0-8%: SLIGHT 8-15%: MODERATE-SLOPE
DAILY COVER FOR LANDFILL	0-8%: GOOD 8-15%: FAIR-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-LOW STRENGTH, SHRINK-SWELL
SAND	IMPERMEABLE-EXCESS FINES
GRAVEL	IMPERMEABLE-EXCESS FINES
TOPSOIL	POOR-THIN LAYER

WATER MANAGEMENT

POND RESERVOIR AREA	0-3%: SLIGHT 3-8%: MODERATE-SLOPE 8+%: SEVERE-SLOPE
EMBANKMENTS DIKES AND LEVEES	SLIGHT
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	0-3%: FAVORABLE 3+%: SLOPE
TERRACES AND DIVERSIONS	0-8%: FAVORABLE 8+%: SLOPE
GRASSED WATERWAYS	0-8%: FAVORABLE 8+%: SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	0-8%: MODERATE-TOO CLAYEY 8-15%: MODERATE-TOO CLAYEY, SLOPE
DWELLINGS WITHOUT BASEMENTS	SEVERE-SHRINK-SWELL
DWELLINGS WITH BASEMENTS	SEVERE-SHRINK-SWELL
SMALL COMMERCIAL BUILDINGS	0-8%: SEVERE-SHRINK-SWELL 8+%: SEVERE-SHRINK-SWELL, SLOPE
LOCAL ROADS AND STREETS	SEVERE-LOW STRENGTH, SHRINK-SWELL
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PLAYGROUNDS	0-2%: MODERATE-SMALL STONES 2-6%: MODERATE-SLOPE,SMALL STONES 6+%: SEVERE-SLOPE
PICNIC AREAS	0-8%: SLIGHT 8-15%: MODERATE-SLOPE	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		ALFALFA HAY (TONS)		EARLEY (BU)		OATS (BU)		WHEAT, SPRING (BU)		GRASS HAY (TONS)					
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
0-3%	4S	2S	-	3.5	20	65	25	80	20	-	.75	2.0				
3-6%	4E	3E	-	3.0	20	55	25	70	20	-	.75	2.0				
6-10%	6C	4E	-	2.5	-	50	-	60	-	-	-	1.5				
10-15%	6E	-	-	-	-	-	-	-	-	-	-	-				

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS				POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
ALL	GREEN ASH	11	RUSSIAN-OLIVE	10	CHINESE ELM	14	SIBERIAN PEASHRUB	7
	ROCKY MT. JUNIPER	7						

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-3% IRR	GOOD	GOOD	FAIR	-	-	FAIR	GOOD	FAIR	GOOD	-	FAIR	FAIR
3-10% IRR	FAIR	GOOD	FAIR	-	-	FAIR	POOR	POOR	FAIR	-	POOR	FAIR
0-6% NIRR	POOR	POOR	FAIR	-	-	FAIR	POOR	V. POOR	POOR	-	V. POOR	FAIR
6-15% NIRR	POOR	POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NRCS)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BIG SAGEBRUSH	ARTR2	10
BLUE GRAMA	BOGR2	10
CUSICK BLUEGRASS	POCU3	5
GREEN NEEDLEGRASS	STVI4	15
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
THICKSPIKE WHEATGRASS	AGDA	5
WESTERN WHEATGRASS	AGSM	30
OTHER PERENNIAL GRASSES	PPGG	10
OTHER PERENNIAL FORBS	PPFF	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1800
NORMAL YEARS		1300
UNFAVORABLE YEARS		750

FOOTNOTES

WY0425

SOIL INTERPRETATIONS RECORD

MLRA(S): 34
DEN.JFY. 3-78
BOROLLIC HAPLARGIDS. LOAMY. MIXED. SHALLOW

WORFMAN SERIES

THE WORFMAN SERIES ARE WELL-DRAINED SOILS FORMING IN RESIDUUM FROM SANDSTONE AND SHALE IN THE UPLANDS. ELEVATION IS 6500 TO 7500 FTTF. PPT IS 10 TO 12 INCHES. MAST IS 43 TO 46 F. FFS IS 80 TO 100 DAYS. TYPICALLY THE SURFACE LAYER IS BROWN SANDY LOAM 3 INCHES THICK. THE UPPER SUBSOIL IS BROWN SANDY CLAY LOAM 7 INCHES THICK. THE LOWER SUBSOIL IS LIGHT BROWNISH GRAY SANDY CLAY LOAM 7 INCHES THICK AND IS UNDERLAIN WITH SOFT SANDSTONE AT 17 INCHES. SLOPES ARE 6 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-3	SL	SM-SC, SM	A-2	0	85-100	85-100	55-65	25-35	20-30	5-10
3-17	L, CL, SCL	CL	A-6	0	85-100	85-100	70-90	50-75	30-40	10-20
17	WB									

DEPTH (IN.)	CLAY (PCT <2MM)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CORROSIVITY CONCRETE
0-3	10-20		2.0-6.0	0.11-0.13	6.6-7.8	<2	LOW	.24	2	3	1-2	HIGH	HIGH
3-17	18-35		0.6-2.0	0.15-0.19	6.6-9.0	<2	MODERATE	.32					
17													

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		10-20	SOFT	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SEWAGE LAGOON AREAS	6-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (AREA)	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DAILY COVER FOR LANDFILL	6-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

CONSTRUCTION MATERIAL

ROADFILL	POOR-AREA RECLAIM
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	6-15%: POOR-AREA RECLAIM 15+%: POOR-AREA RECLAIM,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	6-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SOIL BLOWING,DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	6-8%: DEPTH TO ROCK,SOIL BLOWING 8+%: SLOPE,DEPTH TO ROCK,SOIL BLOWING
GRASSED WATERWAYS	6-8%: DEPTH TO ROCK 8+%: SLOPE,DEPTH TO ROCK

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
DWELLINGS WITHOUT BASEMENTS	6-8%: MODERATE-SHRINK-SWELL,DEPTH TO ROCK 8-15%: MODERATE-SHRINK-SWELL,SLOPE, DEPTH TO ROCK 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-DEPTH TO ROCK,SLOPE
SMALL COMMERCIAL BUILDINGS	6-8%: MODERATE-SHRINK-SWELL,SLOPE, DEPTH TO ROCK 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	6-8%: MODERATE-DEPTH TO ROCK,LOW STRENGTH 8-15%: MODERATE-DEPTH TO ROCK,LOW STRENGTH, SLOPE 15+%: SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	6-15%: SEVERE-THIN LAYER 15+%: SEVERE-SLOPE,THIN LAYER

REGIONAL INTERPRETATIONS

RECREATIONAL DEVELOPMENT

CAMP AREAS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PLAYGROUNDS	SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	6-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK	PATHS AND TRAILS	6-15%: SLIGHT 15-20%: MODERATE-SLOPE

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E																

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	TREES TO PLANT
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR		V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	15
INDIAN RICEGRASS	ORHY	20
NEEDLEANDTHREAD	STCO4	10
BOTTLEBRUSH SQUIRRELTAIL	SIHY	5
LOW RABBITBRUSH	CHVIH2	5
NEEDLELEAF SEDGE	CAEL2	5
PRAIRIE JUNEGRASS	KOCR	5
SANDBERG BLUEGRASS	POSE	5
SKUNKBUSH SUMAC	RHTR	5
THICKSPIKE WHEATGRASS	AGDA	10
WINTERFAT	EURO1	5
OTHER PERENNIAL FORBS	PPFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1200
NORMAL YEARS		900
UNFAVORABLE YEARS		700

FOOTNOTES

/Y9046

S O I L I N T E R P R E T A T I O N S R E C O R D

ILRA(S): 34, 46, 58B
JWW, 2-82
OROLLIC LITHIC HAPLARGIDS, LOAMY, MIXED

WORFMAN VARIAN

WORFMAN VARIANT SOILS ARE SHALLOW, SOMEWHAT EXCESSIVELY DRAINED SOILS FORMED IN RESIDUUM DERIVED FROM SANDSTONE OR SAND SHALE. THEY ARE ON TILTED BEDROCK PLAINS. ELEVATIONS ARE 6000 TO 6600 FEET. PPT IS 10 TO 14 INCHES. MAST IS 45 TO 47 F. TFS IS 80 TO 100 DAYS. TYPICALLY, THE SURFACE LAYER IS BROWN SANDY LOAM 4 INCHES THICK. THE UPPER PART OF THE SUBSOIL IS BROWN SANDY CLAY LOAM 5 INCHES THICK. THE LOWER PART OF THE SUBSOIL IS LIGHT BROWN CLAY LOAM 8 INCHES THICK OVERLAYING HARD SANDSTONE BEDROCK. SLOPES RANGE FROM 3 TO 15 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-4	SL	SM	A-2	0	90-100	85-100	50-65	25-35	20-25	NP-5
4-17	SCL, CL	SC, CL	A-6	0	85-100	85-100	60-75	45-60	30-40	10-20
17	UWB									

DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	T	WIND EROD. GROUP	ORGANIC MATTER (PCT)	CORROSIVITY STEEL	CONCRETE
0-4	15-20		2.0-6.0	0.11-0.13	6.6-7.8	-	LOW	.24	1	3	1-2	HIGH	LOW
4-17	25-35		0.6-2.0	0.15-0.19	7.4-9.0	<2	MODERATE	.37					
17													

FLOODING FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE DEPTH (FT)	KIND	MONTHS	CEMENTED PAN DEPTH (IN)	HARDNESS	BEDROCK DEPTH (IN)	HARDNESS	SUBSIDENCE INIT. (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		10-20	HARD	-		D	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	SEVERE-DEPTH TO ROCK
SEWAGE LAGOON AREAS	3-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	SEVERE-DEPTH TO ROCK
DAILY COVER FOR LANDFILL	POOR-AREA RECLAIM

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	SEVERE-DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	SEVERE-DEPTH TO ROCK
DWELLINGS WITH BASEMENTS	SEVERE-DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	3-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-SLOPE,DEPTH TO ROCK
LOCAL ROADS AND STREETS	SEVERE-DEPTH TO ROCK
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	SEVERE-THIN LAYER

CONSTRUCTION MATERIAL

ROADFILL	POOR-AREA RECLAIM
SAND	IMPROBABLE-EXCESS FINES
GRAVEL	IMPROBABLE-EXCESS FINES
TOPSOIL	POOR-AREA RECLAIM

WATER MANAGEMENT

POND RESERVOIR AREA	3-8%: SEVERE-DEPTH TO ROCK 8+%: SEVERE-DEPTH TO ROCK,SLOPE
EMBANKMENTS DIKES AND LEVEES	SEVERE-THIN LAYER
EXCAVATED PONDS AQUIFER FED	SEVERE-NO WATER
DRAINAGE	DEEP TO WATER
IRRIGATION	SOIL BLOWING,DEPTH TO ROCK,SLOPE
TERRACES AND DIVERSIONS	3-8%: DEPTH TO ROCK,ERODES EASILY 8+%: SLOPE,DEPTH TO ROCK,ERODES EASILY
GRASSED WATERWAYS	3-8%: ERODES EASILY,DEPTH TO ROCK 8+%: SLOPE,ERODES EASILY,DEPTH TO ROCK

REGIONAL INTERPRETATIONS

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RECREATIONAL DEVELOPMENT

CAMP AREAS	SEVERE-DEPTH TO ROCK	PLAYGROUNDS	3-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	SEVERE-DEPTH TO ROCK	PATHS AND TRAILS	SLIGHT

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY															
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
ALL	7E	-														

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	COMMON TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
	NONE							

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS							POTENTIAL AS HABITAT FOR:				
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
ALL	V. POOR	V. POOR	FAIR	-	-	FAIR	V. POOR	V. POOR	POOR	-	V. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
BLUEBUNCH WHEATGRASS	AGSP	30
PRAIRIE JUNEGRASS	KOCR	10
BIG SAGEBRUSH	ARTR2	10
SANDBERG BLUEGRASS	POSE	5
RABBITBRUSH	CHRYS9	5
THREADLEAF SEDGE	CAFI	5
WESTERN WHEATGRASS	AGSM	10
PHLOX	PHLOX	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		1200
NORMAL YEARS		850
UNFAVORABLE YEARS		400

FOOTNOTES

SOIL SURVEY INTERPRETATIONS

MLRA(S): 46, 52
RER, 7-75
ARGIC CRYOBOROLLS, FINE-LOAMY, MIXED

WOOSLEY SERIES

THE WOOSLEY SERIES ARE MODERATELY DEEP, WELL-DRAINED SOILS FORMED IN RESIDUUM FROM LIMESTONE. THEY OCCUPY SIDES OF MOUNTAINS, HILLS, AND RIDGES IN A 20 TO 24 INCH PRECIPITATION ZONE. THE ELEVATIONS ARE UNDER 8000 FEET. THE GROWING SEASON IS 60 TO 90 DAYS. TYPICALLY, THEY HAVE A SILT LOAM SURFACE LAYER, ABOUT 7 INCHES THICK. THE SUBSOIL IS A SILTY CLAY LOAM, OVERLYING BEDROCK AT DEPTHS OF 20 TO 40 INCHES. THE VEGETATION IS MAINLY ROUGH FESCUE, RICHARDSON NEEDLEGRASS, FORBS, AND SHRUBS. SLOPES ARE 2 TO 20 PERCENT.

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT >3 IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
0-7	SIL	ML, CL	A-4, A-6	0-5	90-100	85-95	85-95	75-90	30-40	5-15
7-21	SICL, CL	CL	A-6	0-5	90-100	85-90	85-90	75-90	35-40	15-20
21-34	GR-CL	GC	A-2, A-6	0-5	55-75	50-60	40-55	30-50	25-35	10-15
34	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY STEEL	CORROSIVITY CONCRETE	EROSION FACTORS K	EROSION FACTORS T	WIND EROD. GROUP
0-7	0.6-2.0	0.18-0.22	6.6-7.3	<2	LOW	HIGH	LOW	.37	2	6
7-21	0.6-2.0	0.14-0.20	6.6-7.8	<2	MODERATE	HIGH	LOW	.37		
21-34	0.6-2.0	0.09-0.16	7.4-8.4	<2	MODERATE	HIGH	LOW	.32		
34										

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENT'L FROST ACTION
NONE			>6.0			-		20-40	HARD	-		C	MODERATE

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SEWAGE LAGOON AREAS	2-7%: SEVERE-DEPTH TO ROCK 7+%: SEVERE-DEPTH TO ROCK,SLOPE
SANITARY LANDFILL (TRENCH)	SEVERE-DEPTH TO ROCK
SANITARY LANDFILL (AREA)	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE
DAILY COVER FOR LANDFILL	2-8%: FAIR-THIN LAYER,TOO CLAYEY 8-15%: FAIR-SLOPE,THIN LAYER,TOO CLAYEY 15+%: POOR-SLOPE

COMMUNITY DEVELOPMENT

SHALLOW EXCAVATIONS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
DWELLINGS WITHOUT BASEMENTS	2-8%: MODERATE-DEPTH TO ROCK,SHRINK-SWELL, FROST ACTION 8-15%: MODERATE-SLOPE,DEPTH TO ROCK, SHRINK-SWELL 15+%: SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	2-15%: SEVERE-DEPTH TO ROCK 15+%: SEVERE-SLOPE,DEPTH TO ROCK
SMALL COMMERCIAL BUILDINGS	2-4%: MODERATE-DEPTH TO ROCK,FROST ACTION, SHRINK-SWELL 4-8%: MODERATE-SLOPE,DEPTH TO ROCK, SHRINK-SWELL 8+%: SEVERE-SLOPE
LOCAL ROADS AND STREETS	2-15%: SEVERE-LOW STRENGTH 15+%: SEVERE-SLOPE,LOW STRENGTH
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	

SOURCE MATERIAL

ROADFILL	POOR-THIN LAYER,LOW STRENGTH
SAND	UNSUITED
GRAVEL	UNSUITED
TOPSOIL	2-8%: FAIR-THIN LAYER,SMALL STONES 8-15%: FAIR-SLOPE,THIN LAYER,SMALL STONES 15+%: POOR-SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	2-4%: DEPTH TO ROCK 4+%: SLOPE,DEPTH TO ROCK
EMBANKMENTS DIKES AND LEVEES	THIN LAYER,SHRINK-SWELL,LOW STRENGTH
EXCAVATED PONDS AQUIFER FED	NO WATER
DRAINAGE	SLOPE,DEPTH TO ROCK,FROST ACTION
IRRIGATION	SLOPE,ROOTING DEPTH
TERRACES AND DIVERSIONS	2-8%: DEPTH TO ROCK,ROOTING DEPTH 8+%: SLOPE,DEPTH TO ROCK,ROOTING DEPTH
GRASSED WATERWAYS	2-4%: FAVORABLE 4+%: SLOPE

REGIONAL INTERPRETATIONS

RECREATION

CAMP AREAS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-SLOPE	PLAYGROUNDS	2-6%: SEVERE-DEPTH TO ROCK 6+%: SEVERE-SLOPE,DEPTH TO ROCK
PICNIC AREAS	2-8%: SLIGHT 8-15%: MODERATE-SLOPE 15+%: SEVERE-	PATHS AND TRAILS	2-15%: SLIGHT 15-20%: MODERATE-SLOPE

CAPABILITY AND PREDICTED YIELDS -- CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY		WHEAT, WINTER (BU)		WHEAT, SPRING (BU)		BARLEY (BU)		ALFALFA HAY (TONS)							
	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
2-8%	4C		33		27		40		2.0							
8-15%	4E		30		25		38		1.7							
15+%	6E															

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDX	
							NONE		

WINDBREAKS

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
2-15%	SIBERIAN ELM		SIBERIAN CRABAPPLE		RUSSIAN-OLIVE		GREEN ASH	
	BLUE SPRUCE		AMERICAN PLUM		LILAC		COMMON CHOKECHERRY	
	NANKING CHERRY		SIBERIAN PEASHRUB		SILVER BUFFALOBERRY		ROCKY MT. JUNIPER	
15+%								

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS						POTENTIAL AS HABITAT FOR:					
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
2-15%	FAIR	FAIR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD
15+%	POOR	POOR	GOOD	-	-	GOOD	V. POOR	V. POOR	FAIR	-	V. POOR	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
ROUGH FESCUE	FESC	60
RICHARDSON NEEDLEGRASS	STRI2	5
MOUNTAIN BROME	BRMA4	5
IDAHO FESCUE	FEID	5
PRAIRIE JUNEGRASS	KOCR	5
SEDGE	CAREX	5
OTHER ANNUAL FORBS	AAFF	5
OTHER PERENNIAL GRASSES	PPGG	5
OTHER SHRUBS	SSSS	5
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS		3800
NORMAL YEARS		
UNFAVORABLE YEARS		2400

FOOTNOTES

SCS-SOILS-5
REV. MAY 1972
FILE CODE SOILS-12

(1)

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL SURVEY INTERPRETATIONS

KEYING ONLY — RECORD NO. | CONTROL: WORD / NO.

MLRA(S) 48 | KIND OF UNIT SERIES | UNIT NAME YAMPA
STATE COLORADO | RECORD NO. 324 | AUTHOR(S) WPT/RD | DATE 3/74 | REVISED | UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

DESCR 031: THE YAMPA SERIES CONSIST OF DEEP SOMEWHAT POORLY DRAINED SOILS FORMED IN MIXED ALLUVIUM ON LOW TERRACES AND FLOODPLAINS. TYPICALLY, THE SURFACE LAYER IS SILT LOAM ABOUT 9 INCHES THICK. THE SUBSURFACE LAYER IS CLAY LOAM ABOUT 15 INCHES THICK AND OVERLIES VERY GRAVELLY SANDY LOAM THAT EXTENDS TO 60 INCHES OR MORE. NATURAL VEGETATION IS MOSTLY GRASS AND SHRUBS. AVERAGE ANNUAL PRECIPITATION IS ABOUT 16 INCHES AND THE FROST FREE SEASON IS ABOUT 100 DAYS. SLOPES ARE 0 TO 5 PERCENT.

ESTIMATED SOIL PROPERTIES

	FOOTNOTE DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE: 4	10	40	200	LIQUID LIMIT	PLASTICITY INDEX
PROP 041	0-9	SIL, L	ML	A-4	0	100	90-100	85-95	70-80	25-35	NP-5
2	9-24	CL, SICL	CL	A-6	0	100	95-100	85-95	85-95	30-45	10-20
3	24-60	GR-SL, GR-LS	GM-GC	A-2	0-5	50-75	50-75	45-70	15-25	10-15	NP
4											
5											
6											

	DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY: STEEL	CONCRETE	EROSION FACTORS: K	T	WIND EROD. GROUP
PROP 051		0.6-2.0	0.16-0.21	6.1-7.8	—	LOW	HIGH	LOW	.37	5	—
2	SAME DEPTH AS ABOVE	0.2-0.6	0.16-0.18	6.6-7.8	—	LOW	↓	↓	.32		
3		2.0-6.0	0.07-0.09	7.4-8.4	—	LOW			.10		
4											
5											
6											

	FLOODING: FREQUENCY	DURATION	MONTHS	HIGH WATER TABLE: DEPTH (FT)	KIND	MONTHS	CEMENTED PAN: DEPTH (IN)	HARDNESS	BEDROCK: DEPTH (IN)	HARDNESS	SUBSIDENCE: INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061	RARE	BRIEF	MAY-JUN	1.5-3.0	APPARENT	APR-OCT	—		>60		—		C	HIGH

	FOOTNOTES	SANITARY FACILITIES	KEYING ONLY	FOOTNOTES	SOURCE MATERIAL
SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	SEVERE - WET, FLOODS	FILL 191	ROADFILL	POOR - FROST ACTION
LAGOON 081	SEWAGE LAGOONS	SEVERE - WET, FLOODS	SAND 201	SAND	POOR
TRENCH 091	SANITARY LANDFILL (TRENCH)	SEVERE - WET, FLOODS	GRAVEL 211	GRAVEL	POOR
SANARE 101	SANITARY LANDFILL (AREA)	SEVERE - WET, FLOODS	SOIL 221	TOPSOIL	FAIR - THIN LAYER, WET
COVER 111	DAILY COVER FOR LANDFILL	FAIR - THIN LAYER, WET		FOOTNOTES	WATER MANAGEMENT
			PONDRS 231	POND RESERVOIR AREA	SEEPAGE
	FOOTNOTES	COMMUNITY DEVELOPMENT			
EXCAV 121	SHALLOW EXCAVATIONS	SEVERE - WET	DIKES 241	EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH, SHRINK-SWELL
DWEL 131	DWELLINGS WITHOUT BASEMENTS	MODERATE - WET, FLOODS	PONDAQ 251	EXCAVATED PONDS AQUIFER FED	FAVORABLE
DWEL 141	DWELLINGS WITH BASEMENTS	SEVERE - WET, FLOODS	DRAIN 261	DRAINAGE	WET
BLDGS 151	SMALL COMMERCIAL BUILDINGS	SEVERE - WET, FLOODS	IRRIG 271	IRRIGATION	WET, FLOODS
ROADS 161	LOCAL ROADS AND STREETS	SEVERE - FROST ACTION	TERRAC 281	TERRACES AND DIVERSIONS	WET
	FOOTNOTES	REGIONAL INTERPRETATIONS	WATERW 291	GRASSED WATERWAYS	WET
REGION 171					
REGION 181					

KEYING ONLY — RECORD NO. / CONTROL WORD / NO.

UNIT NAME: YAMPA
UNIT MODIFIER:

(2)

RECREATION

	KEYING ONLY	FOOTNOTE		KEYING ONLY	FOOTNOTE
CAMPS	301	SEVERE-FLOODS	PLAYGD	321	0-2%: MODERATE-FLOODS, PERCS SLOWLY 2-4%: MODERATE-SLOPE, FLOODS, PERCS SLOWLY
CAMP AREAS			PLAYGROUNDS		
PICNIC	311	MODERATE-FLOODS	PATHS	331	SLIGHT
PICNIC AREAS			PATHS AND TRAILS		

CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CROPHD 451

CROPS 341	CLASS-DETERMINING PHASE	CAPABILITY NIRR	CAPABILITY IRR.	WHEAT (BU) NIRR	WHEAT (BU) IRR.	GRASS HAY (TONS) NIRR	GRASS HAY (TONS) IRR.	ALFALFA HAY (TONS) NIRR	ALFALFA HAY (TONS) IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
	ALL	5W	4W		40	2.5	4		3								

WOODLAND SUITABILITY

WOODS 361

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	POTENTIAL PRODUCTIVITY: IMPORTANT TREES	SITE INDEX	TREES TO PLANT
							NONE		

WIND BREAKS

WINDBK 381

CLASS-DETERMINING PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
—	NONE							

WILDLIFE HABITAT SUITABILITY

WILDLF 391

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	POOR	POOR	GOOD	—	—	GOOD	GOOD	GOOD	FAIR	—	GOOD	GOOD

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PHASE 401 — PLANT 411

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE: ALL
OVALHEAD SEDGE	CAEG2	15
BALTIC RUSH	JUBA	10
SLENDER WHEATGRASS	AGTR	10
CANADA BLUEGRASS	POCO	5
FOXTAIL BARLEY	HOJU	5
CLOVERS	TRIFO	10
WILLOWS	SALIX	10
NARROWLEAF COTTONWOOD	POAN3	5
OTHERS	OOOO	30

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):	
FAVORABLE YEARS	4000
NORMAL YEARS	3000
UNFAVORABLE YEARS	2000

SOIL

NOTES 441 — FOOTNOTES

Glossary of Soil Science Terms (2)

acid soil—Soil with a pH value < 7.0.

alkaline soil—Any soil having a pH > 7.0. See reaction, soil.

Alluvial soil—(i) A soil developing from recently deposited alluvium and exhibiting essentially no horizon development or modification of the recently deposited materials. (ii) When capitalized the term refers to a great soil group of the azonal order consisting of soils with little or no modification of the recent sediment in which they are forming (indicated by absence of a B horizon).

amendment, soil—(i) An alteration of the properties of a soil, and thereby of the soil, by the addition of substances such as lime, gypsum, sawdust, etc., to the soil for the purpose of making the soil more suitable for the production of plants. (ii) Any such substance used for this purpose. Strictly speaking, fertilizers constitute a special group of soil amendments.

available water—The portion of water in a soil that can be readily absorbed by plant roots. Considered by most workers to be that water held in the soil against a pressure of up to approximately 15 bars. See field capacity and moisture tension.

bedrock—The solid rock underlying soils and the regolith in depths ranging from zero (where exposed by erosion) to several hundred feet.

bulk density, soil—The mass of dry soil per unit bulk volume. The bulk volume is determined before drying to constant weight at 105C.

carbon–nitrogen ratio—The ratio of the weight of organic carbon to the weight of total nitrogen (mineral plus organic forms) in soil or organic material. Often used synonymously

calcareous soil—Soil containing sufficient free calcium carbonate or calcium–magnesium carbonate to effervesce visibly when treated with cold 0.1*N* hydrochloric acid.

cation exchange—The interchange between a cation in solution and another cation on the surface of any surface-active material such as clay colloid or organic colloid.

cation-exchange capacity (CEC)—The sum total of exchangeable cations that a soil can adsorb. Expressed in milliequivalents per 100 grams or per gram of soil (or of other exchangers such as clay).

chisel, subsoil—A tillage implement with one or more cultivator-type feet to which are attached strong knifelike units used to shatter or loosen hard, compact layers, usually in the subsoil, to depths below normal plow depth. See subsoiling.

chiseling—The breaking or shattering of compact soil or subsoil layers by use of a chisel.

chroma—The relative purity, strength, or saturation of a color; directly related to the dominance of the determining wavelength of the light and inversely related to grayness; one of the three variables of color. See Munsell color system, hue, and value, color.

class, soil—A group of soils having a definite range in a particular property such as acidity, degree of slope, texture, structure, land-use capability, degree of erosion, or drainage. See soil texture and soil structure.

classification, soil—The systematic arrangement of soils into groups or categories on the basis of their characteristics. Broad groupings are made on the basis of general characteristics and subdivisions on the basis of more detailed differences in specific properties. In the United States the following system has been used since 1938 with additional great soil groups added in 1949 (*from* Soil Survey Staff, SCS, USDA, 1960, Soil classification: A comprehensive system—7th Approximation. p. 9. U.S. Govt. Printing Office, Washington). On Jan. 1, 1965, a new USDA soil classification system (soil taxonomy) was adopted for use in publications by the National Cooperative Soil Survey. An outline of this system and selected terms from the system are presented in Appendix II.

clay—(i) A soil separate consisting of particles < 0.002 mm in equivalent diameter. See soil separates. (ii) A textural class. See soil texture.

clayey—Containing large amounts of clay or having properties similar to those of clay.

clay loam—A textural class. See soil texture.

clay mineral—(i) Naturally occurring inorganic crystalline material found in soils and other earthy deposits, the particles being of clay size; that is, < 0.002 mm in diameter. (ii) Material as described under (i), but not limited by particle size. See Appendix I.

claypan—A dense, compact layer in the subsoil having a much higher clay content than the overlying material, from which it is separated by a sharply defined boundary; formed by downward movement of clay or by synthesis of clay in place during soil formation. Claypans are usually hard when dry, and plastic and sticky when wet. Also, they usually impede the movement of water and air, and the growth of plant roots.

coarse fragments—Rock or mineral particles > 2.0 mm in diameter. The following names are used for coarse fragments in soils.*

Fragments†		Descriptive terms applied to fragments that have:		
Shape	Material	Diameters less than 3 inches	Diameters from 3 to 10 inches	Diameters more than 10 inches
rounded or subrounded	all kinds of rock	gravelly	cobbly	stony‡
irregular and angular	chert	cherty	coarse cherty	stony
	other than chert	angular gravelly	angular cobbly	stony
		Lengths up to 6 inches	Lengths from 6 to 15 inches	Lengths over 15 inches
thin and flat	limestone, sandstone, or schist	channery	flaggy	stony
	slate	slaty	flaggy	stony
	shale	shaly	flaggy	stony

* From: Soil Survey Staff, SCS, USDA, 1951. Soil survey manual, U.S. Dept. Agr. Handbook 18, p. 214. U. S. Government Printing Office, Washington. † The adjectives describing fragments are also applied to lands and soils when they have significant amounts of such fragments. ‡ "bouldery" is sometimes used when stones are larger than 24 inches.

coarse texture—The texture exhibited by sands, loamy sands, and sandy loams except very fine sandy loam. A soil containing large quantities of these textural classes (United States usage). See sand, sandy, and moderately-coarse texture.

cobbles—See cobblestone.

cobblestone—Rounded or partially rounded rock or mineral fragments between 3 and 10 inches in diameter. See coarse fragments.

cobbly—Containing appreciable quantities of cobblestones. (Said of soil and of land. The term "angular cobbly" is used when the fragments are less rounded.) See coarse fragments.

colluvium—A deposit of rock fragments and soil material accumulated at the base of steep slopes as a result of gravitational action. See creep.

consistency—(i) The resistance of a material to deformation or rupture. (ii) The degree of cohesion or adhesion of the soil mass. Terms used for describing consistency at various soil moisture contents are:

WET SOIL—nonsticky, slightly sticky, sticky, very sticky, nonplastic, slightly plastic, plastic, and very plastic.

MOIST SOIL—loose, very friable, friable, firm, very firm, and extremely firm.

DRY SOIL—loose, soft, slightly hard, hard, very hard, and extremely hard.

CEMENTATION—weakly cemented, strongly cemented, and indurated.

decomposition—The process of resolving into constituent parts. Mineral elements are generally among the terminal products. See dissimilation (Appendix IV) and mineralization.

deflocculate—(i) To separate the individual components of compound particles by chemical and/or physical means. (ii) To cause the particles of the *dispersed phase* of a colloidal system to become suspended in the *dispersion medium*.

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deposit—Material left in a new position by a natural transporting agent such as water, wind, ice, or gravity, or by the activity of man.

drain, to—(i) To provide channels, such as open ditches or drain tile, so that excess water can be removed by surface or by internal flow. (ii) To lose water (from the soil) by percolation.

drainage, excessive—Too much or too rapid loss of water from soils, either by percolation or by surface flow. Loss greater than that necessary to prevent the development of an anaerobic condition for any appreciable length of time.

drainage terrace—See terrace.

drain tile—Concrete or ceramic pipe used to conduct water from the soil.

erosion—(i) The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. (ii) Detachment and movement of soil or rock by water, wind, ice, or gravity. The following terms are used to describe different types of water erosion:

accelerated erosion—Erosion much more rapid than normal, natural, geological erosion, primarily as a result of the influence of the activities of man or, in some cases, of animals.

geological erosion—The normal or natural erosion caused by geological processes acting over long geologic periods and resulting in the wearing away of mountains, the building up of flood plains, coastal plains, etc. Synonymous with *natural erosion*.

gully erosion—The erosion process whereby water accumulates in narrow channels and, over short periods, removes the soil from this narrow area to considerable depths, ranging from 1 or 2 feet to as much as 75 to 100 feet.

natural erosion—Wearing away of the earth's surface by water, ice, or other natural agents under natural environmental conditions of climate, vegetation, etc., undisturbed by man. Synonymous with *geological erosion*.

normal erosion—The gradual erosion of land used by man which does not greatly exceed natural erosion. See *natural erosion*.

rill erosion—An erosion process in which numerous small channels of only several inches in depth are formed; occurs mainly on recently cultivated soils. See rill.

sheet erosion. The removal of a fairly uniform layer of soil from the land surface by runoff water.

splash erosion—The spattering of small soil particles caused by the impact of raindrops on very wet soils. The loosened and spattered particles may or may not be subsequently removed by surface runoff.

erosion classes—A grouping of erosion conditions based on the degree of erosion or on characteristic patterns. (Applied to accelerated erosion; not to normal, natural, or geological erosion.) Four erosion classes are recognized for water erosion and three for wind erosion. Specific definitions for each vary somewhat from one climatic zone, or major soil group, to another. (For details see Soil Survey Staff, SCS, USDA. 1951. Soil survey manual. U. S. Dept. Agr. Handbook 18. U. S. Government Printing Office, Washington.)

exchangeable-sodium percentage—The percentage of the cation-exchange capacity of a soil occupied by sodium. It is expressed as follows:

$$\text{ESP} = \frac{\text{Exchangeable sodium (meq/100g soil)}}{\text{Cation-exchange capacity (meq/100g soil)}} \times 100.$$

family, soil—In soil classification one of the categories intermediate between the great soil group and the soil series. See classification, soil.

fertility, soil—The status of a soil with respect to the amount and availability to plants of elements necessary for plant growth.

fine texture—Consisting of or containing large quantities of the fine fractions, particularly of silt and clay. (Includes all clay loams and clays; that is, clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay, and clay textural classes. Sometimes subdivided into clayey texture and moderately fine texture.) See soil texture.

fire, ground—(Forestry) A fire that consumes all organic material of the forest floor and also burns into the underlying soil

first bottom—The normal flood plain of a stream.

flood plain—The land bordering a stream, built up of sediments from overflow of the stream and subject to inundation when the stream is at flood stage. See first bottom.

gilgai—The microrelief of soils produced by expansion and contraction with changes in moisture. Found in soils that contain large amounts of clay which swells and shrinks considerably with wetting and drying. Usually a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel to the direction of the slope. See microrelief.

gully—A channel resulting from erosion and caused by the concentrated but intermittent flow of water usually during and immediately following heavy rains. Deep enough to interfere with, and not to be obliterated by, normal tillage operations.

hardpan—A hardened soil layer, in the lower A or in the B horizon, caused by cementation of soil particles with organic matter or with materials such as silica, sesquioxides, or calcium carbonate. The hardness does not change appreciably with changes in moisture content and pieces of the hard layer do not slake in water. See caliche and claypan.

hue—One of the three variables of color. It is caused by light of certain wavelengths and changes with the wavelength. See Munsell color system, chroma, and value, color.

humus—(i) That more or less stable fraction of the soil organic matter remaining after the major portion of added plant and animal residues have decomposed. Usually it is dark colored. (ii) Includes the F and H Layers in undisturbed forest soils. See soil organic matter, mor, mull, and soil horizon.

hydraulic conductivity—See soil water.

igneous rock—Rock formed from the cooling and solidification of magma, and that has not been changed appreciably since its formation.

irrigation methods—The manner in which water is artificially applied to an area. The methods and the manner of applying the water are as follows:

border-strip—The water is applied at the upper end of a strip with earth borders to confine the water to the strip.

check-basin—The water is applied rapidly to relatively level plots surrounded by levees. The basin is a small check.

corrugation—The water is applied to small, closely-spaced furrows, frequently in grain and forage crops, to confine the flow of irrigation water to one direction.

flooding—The water is released from field ditches and allowed to flood over the land.

furrow—The water is applied to row crops in ditches made by tillage implements.

sprinkler—The water is sprayed over the soil surface through nozzles from a pressure system.

subirrigation—The water is applied in open ditches or tile lines until the water table is raised sufficiently to wet the soil.

wild-flooding—The water is released at high points in the field and distribution is uncontrolled.

kaolin—(i) An aluminosilicate mineral of the 1:1 crystal lattice group; that is, consisting of one silicon tetrahedral layer and one aluminum oxide-hydroxide octahedral layer. (ii) The 1:1 group or family of aluminosilicates.

lacustrine deposit—Material deposited in lake water and later exposed either by lowering of the water level or by the elevation of the land.

land classification—The arrangement of land units into various categories based upon the properties of the land or its suitability for some particular purpose.

leaching—The removal of materials in solution from the soil.

lime, agricultural—A soil amendment consisting principally of calcium carbonate but including magnesium carbonate and perhaps other materials, and used to furnish calcium and magnesium as essential elements for the growth of plants and to neutralize soil acidity.

lime concretion—An aggregate of precipitated calcium carbonate, or of other material cemented by precipitated calcium carbonate.

lime-pan—A hardened layer cemented by calcium carbonate.

lime requirement—The mass of agricultural limestone, or the equivalent of other specified liming material, required per acre to a soil depth of 6 inches (or on 2 million pounds of soil) to raise the pH of the soil to a desired value under field conditions.

liquid limit—The minimum percentage (by weight) of moisture at which a small sample of soil will barely flow under a standard treatment. Synonymous with "upper plastic limit." See plastic limit and plasticity number.

loamy—Intermediate in texture and properties between fine-textured and coarse-textured soils. Includes all textural classes with the words "loam" or "loamy" as a part of the class name, such as clay loam or loamy sand.

marl—Soft and unconsolidated calcium carbonate, usually mixed with varying amounts of clay or other impurities.

marsh—Periodically wet or continually flooded areas with the surface not deeply submerged. Covered dominantly with sedges, cattails, rushes, or other hydrophytic plants. Subclasses include fresh-water and salt-water marshes. See swamp.

metamorphic rock—Rock derived from pre-existing rocks but that differ from them in physical, chemical, and mineralogical properties as a result of natural geological processes, principally heat and pressure, originating within the earth. The pre-existing rocks may have been igneous, sedimentary, or another form of metamorphic rock.

micronutrient—A chemical element necessary in only extremely small amounts ($<$ 1 ppm in the plant) for the growth of plants. Examples are: B, Cl, Cu, Fe, Mn, and Zn. ("micro" refers to the amount used rather than to its essentiality.) See macronutrient.

microrelief—Small-scale, local differences in topography, including mounds, swales, or pits that are only a few feet in diameter and with elevation differences of up to 6 feet. See coppice mound, cradle knoll, and gilgai.

moderately-coarse texture—Consisting predominantly of coarse particles. (In soil textural classification, it includes all the sandy loams except the very fine sandy loam.) See coarse texture.

moderately-fine texture—Consisting predominantly of intermediate-size (soil) particles or with relatively small amounts of fine or coarse particles. (In soil textural classification, it includes clay loam, sandy clay loam, and silty clay loam.) See fine texture.

montmorillonite—An aluminosilicate clay mineral with a 2:1 expanding crystal structure, that is, with two silicon tetrahedral layers enclosing an aluminum octahedral layer. Considerable expansion may be caused along the C axis by water moving between silica layers of contiguous units.

mottling—Spots or blotches of different color or shades of color interspersed with the dominant color.

muck—Highly decomposed organic material in which the original plant parts are not recognizable. Contains more mineral matter and is usually darker in color than peat.
peat,

Munsell color system—A color designation system that specifies the relative degrees of the three simple variables of color: hue, value, and chroma. For example: 10YR 6/4 is a color (of soil) with a hue = 10YR, value = 6, and chroma = 4. These notations can be translated into several different systems of color names as desired. See chroma, hue, and value, color.

parent material—The unconsolidated and more or less chemically weathered mineral or organic matter from which the solum of soils is developed by pedogenic processes.

parts per million (ppm)—Weight units of any given substance per one million equivalent weight units of oven-dry soil; or, in the case of soil solution or other solution, the weight units of solute per million weight units of solution.

peat—Unconsolidated soil material consisting largely of undecomposed, or only slightly decomposed, organic matter accumulated under conditions of excessive moisture.

pH, soil—The negative logarithm of the hydrogen-ion activity of a soil. The degree of acidity (or alkalinity) of a soil as determined by means of a glass, quinhydrone, or other suitable electrode or indicator at a specified moisture content or soil-water ratio, and expressed in terms of the pH scale.

ped—A unit of soil structure such as an aggregate, crumb, prism, block, or granule, formed by natural processes (in contrast with a clod, which is formed artificially).

percolation, soil water—The downward movement of water through soil. Especially, the downward flow of water in saturated or nearly saturated soil at hydraulic gradients of the order of 1.0 or less.

permeability, soil—(i) The ease with which gases, liquids, or plant roots penetrate or pass through a bulk mass of soil or a layer of soil. Since different soil horizons vary in permeability, the particular horizon under question should be designated. (ii) The property of a porous medium itself that relates to the ease with which gases, liquids, or other substances can pass through it. Previously, frequently considered the "k" in Darcy's law. The "K" in intrinsic permeability.

plastic limit—The minimum moisture percentage by weight at which a small sample of soil material can be deformed without rupture. Synonymous with "lower plastic limit." See liquid limit and plasticity number.

reaction, soil—The degree of acidity or alkalinity of a soil, usually expressed as a pH value. Descriptive terms commonly associated with certain ranges in pH are: *extremely acid*, $<$4.5; *very strongly acid*, 4.5–5.0; *strongly acid*, 5.1–5.5; *moderately acid*, 5.6–6.0; *slightly acid*, 6.1–6.5; *neutral*, 6.6–7.3; *slightly alkaline*, 7.4–7.8; *moderately alkaline*, 7.9–8.4; *strongly alkaline*, 8.5–9.0; and *very strongly alkaline*, $>$9.1.

runoff—That portion of the precipitation on an area which is discharged from the area through stream channels. That which is lost without entering the soil is called *surface runoff* and that which enters the soil before reaching the stream is called

saline soil—A nonsodic soil containing sufficient soluble salt to impair its productivity. The electrical conductivity of the saturation extract is $>$ 2 mmhos per centimeter at 25C.

salt-affected soil—Soil that has been adversely modified for the growth of most crop plants by the presence of soluble salts, exchangeable sodium, or both.

secondary mineral—A mineral resulting from the decomposition of a primary mineral or from the reprecipitation of the products of decomposition of a primary mineral. See primary mineral.

sedimentary rock—A rock formed from materials deposited from suspension or precipitated from solution and usually being more or less consolidated. The principal sedimentary rocks are sandstones, shales, limestones, and conglomerates.

silt—(i) A soil separate consisting of particles between 0.05 and 0.002 mm in equivalent diameter. See soil separates. (ii) A soil textural class. See soil texture.

sodic soil—(i) A soil containing sufficient exchangeable-sodium to interfere with the growth of most crop plants. (ii) A soil in which the sodium-adsorption ratio of the saturation extract is 15 or more.

soil—(i) The unconsolidated mineral material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (ii) The unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of: *parent material, climate* (including moisture and temperature effects), *macro-* and *microorganisms*, and *topography*, all acting over a period of *time* and producing a product—soil—that differs from the material from which it is derived in many physical, chemical, biological and morphological properties, and characteristics.

soil association—(i) A group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a geographic region, comparable to plant associations in many ways. (Sometimes called "natural land type.") (ii) A mapping unit used on general soil maps, in which two or more defined taxonomic units occurring together in a characteristic pattern are combined because the scale of the map or the purpose for which it is being made does not require delineation of the individual soils.

soil complex—A mapping unit used in detailed soil surveys where two or more defined taxonomic units are so intimately intermixed geographically that it is undesirable or impractical, because of the scale being used, to separate them. A more intimate mixing of smaller areas of individual taxonomic units than that described under soil association.

soil horizon—A layer of soil or soil material approximately parallel to the land surface and differing from adjacent genetically related layers in physical, chemical, and biological properties or characteristics such as color, structure, texture, consistency, kinds and numbers of organisms present, degree of acidity or alkalinity, etc. The following table lists the designations and properties of the major soil horizons. Very few if any soils have all of these horizons well developed but every soil has some of them.

Horizon designation	*Description*
O	Organic horizons of mineral soils. Horizons: (i) formed or forming in the upper part of mineral soils above the mineral part; (ii) dominated by fresh or partly decomposed organic material; and (iii) containing > 30% organic matter if the mineral fraction is > 50% clay, or > 20% organic matter if the mineral fraction has no clay. Intermediate clay content requires proportional organic-matter content.
O1	Organic horizons in which essentially the original form of most vegetative matter is visible to the naked eye. The O1 corresponds to the L (litter) and some F (fermentation) layers in forest soils designations, and to the horizon formerly called Aoo.
O2	Organic horizons in which the original form of most plant or animal matter cannot be recognized with the naked eye. The O2 corresponds to the H (humus) and some F (fermentation) layers in forest soils designations, and to the horizon formerly called Ao.
A	Mineral horizons consisting of: (i) horizons of organic-matter accumulation formed or forming at or adjacent to the surface; (ii) horizons that have lost clay, iron, or aluminum with resultant concentration of quartz or other resistant minerals of sand or silt size; or (iii) horizons dominated by (i) or (ii) above but transitional to an underlying B or C.
A1	Mineral horizons, formed or forming at or adjacent to the surface, in which the feature emphasized is an accumulation of humified organic matter intimately associated with the mineral fraction.
A2	Mineral horizons in which the feature emphasized is loss of clay, iron, or aluminum, with resultant concentration of quartz or other resistant minerals in sand and silt sizes.
A3	A transitional horizon between A and B, and dominated by properties characteristic of an overlying A1 or A2 but having some subordinate properties of an underlying B.
AB	A horizon transitional between A and B, having an upper part dominated by properties of A and a lower part dominated by properties of B, and the two parts cannot be conveniently separated into A3 and B1.
A & B	Horizons that would qualify for A2 except for included parts constituting < 50% of the volume that would qualify as B.
AC	A horizon transitional between A and C, having subordinate properties of both A and C, but not dominated by properties characteristic of either A or C.
B & A	Any horizon qualifying as B in > 50% of its volume including parts that qualify as A2.
B	Horizons in which the dominant feature or features is one or more of the following: (i) an illuvial concentration of silicate clay, iron, aluminum, or humus, alone or in combination; (ii) a residual concentration of sesquioxides or silicate clays, alone or mixed, that has formed by means other than solution and removal of carbonates or more soluble salts; (iii) coatings of sesquioxides adequate to give conspicuously darker, stronger, or redder colors than overlying and underlying horizons in the same sequum but without apparent illuviation of iron and not genetically related to B horizons that meet requirements of (i) or (ii) in the same sequum; or (iv) an alteration of material from its original condition in sequums lacking conditions defined in (1), (ii), and (iii) that obliterates original rock structure, that forms silicate clays, liberates oxides, or both, and that forms granular, blocky, or prismatic structure if textures are such that volume changes accompany changes in moisture.
B1	A transitional horizon between B and A1 or between B and A2 in which the horizon is dominated by properties of an underlying B2 but has some subordinate properties of an overlying A1 or A2.
B2	That part of the B horizon where the properties on which the B is based are without clearly expressed subordinate characteristics indicating that the horizon is transitional to an adjacent overlying A or an adjacent underlying C or R.
B3	A transitional horizon between B and C or R in which the properties diagnostic of an overlying B2 are clearly expressed but are associated with clearly expressed properties characteristic of C or R.
C	A mineral horizon or layer, excluding bedrock, that is either like or unlike the material from which the solum is presumed to have formed, relatively little affected by pedogenic processes, and lacking properties diagnostic of A or B but including materials modified by: (i) weathering outside the zone of major biological activity; (ii) reversible cementation, development of brittleness, development of high bulk density, and other properties characteristic of fragipans; (iii) gleying; (iv) accumulation of calcium or magnesium carbonate or more soluble salts; (v) cementation by accumulations such as calcium or magnesium carbonate or more soluble salts; or (vi) cementation by alkali-soluble siliceous material or by iron and silica.
R	Underlying consolidated bedrock, such as granite, sandstone, or limestone. If presumed to be like the parent rock from which the adjacent overlying layer or horizon was formed, the symbol R is used alone. If presumed to be unlike the overlying material, the R is preceded by a Roman numeral denoting lithologic discontinuity.

soil map—A map showing the distribution of soil types or other soil mapping units in relation to the prominent physical and cultural features of the earth's surface. The following kinds of soil maps are recognized in the United States:

soil organic matter—The organic fraction of the soil; includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by the soil population. Usually determined on soils which have been sieved through a 2.0-mm sieve.

SUBJECT

Table 1—Types and classes of soil structure*

Class	Type (shape and arrangement of peds)						
	Platelike with one dimension (the vertical) limited and greatly less than the other two; arranged around a horizontal plane; faces mostly horizontal	Prismlike with two dimensions (the horizontal) limited and considerably less than the vertical; arranged around a vertical line; vertical faces well defined; vertices angular		Blocklike; polyhedronlike, or spheroidal, with three dimensions of the same order of magnitude, arranged around a point			
				Blocklike; blocks or polyhedrons having plane or curved surfaces that are casts of the molds formed by the faces of the surrounding peds		Spheroids of polyhedrons having plane or curved surfaces which have slight or no accommodation to the faces of surrounding peds	
		Without rounded caps	With rounded caps	Faces flattened; most vertices sharply angular	Mixed rounded and flattened faces with many rounded vertices	Relatively nonporous peds	Porous peds
	Platy	Prismatic	Columnar	(Angular) Blocky†	Subangular blocky‡	Granular	Crumb
Very fine or very thin	Very thin platy; < 1 mm	Very fine prismatic; < 10 mm	Very fine columnar; < 10 mm	Very fine angular blocky; < 5 mm	Very fine subangular blocky; < 5 mm	Very fine granular; < 1 mm	Very fine crumb; < 1 mm
Fine or thin	Thin platy; 1 - 2 mm	Fine prismatic; 10 - 20 mm	Fine columnar; 10 - 20 mm	Fine angular blocky; 5 - 10 mm	Fine subangular blocky; 5 - 10 mm	Fine granular; 1 - 2 mm	Fine crumb; 1 - 2 mm
Medium	Medium platy; 2 - 5 mm	Medium prismatic; 20 - 50 mm	Medium columnar; 20 - 50 mm	Medium angular blocky; 10 - 20 mm	Medium subangular blocky; 10 - 20 mm	Medium granular; 2 - 5 mm	Medium crumb; 2 - 5 mm
Coarse or thick	Thick platy; 5 - 10 mm	Coarse prismatic; 50 - 100 mm	Coarse columnar; 50 - 100 mm	Coarse angular blocky; 20 - 50 mm	Coarse subangular blocky; 20 - 50 mm	Coarse granular; 5 - 10 mm	
Very coarse or very thick	Very thick platy; > 10 mm	Very coarse prismatic; > 100 mm	Very coarse columnar; > 100 mm	Very coarse angular blocky; > 50 mm	Very coarse subangular blocky; > 50 mm	Very coarse granular; > 10 mm	

* From: Soil Survey Staff, SCS, USDA. 1951. Soil survey manual. U. S. Dept. Agr. Handbook 18, p. 228. U. S. Goverhment Printing Office, Washington.

† (a) Sometimes called nut. (b) The word "angular" in the name ordinarily can be omitted.

‡ Sometimes called nuciform, nut, or subangular nut. Since the size connotation of these terms is a source of great confusion to many, they are not recommended.

soil series—The basic unit of soil classification being a subdivision of a family and consisting of soils which are essentially alike in all major profile characteristics except the texture of the A horizon.

soil structure—The combination or arrangement of primary soil particles into secondary particles, units, or peds. These secondary units may be, but usually are not, arranged in the profile in such a manner as to give a distinctive characteristic pattern. The secondary units are characterized and classified on the basis of size, shape, and degree of distinctness into classes, types, and grades, respectively. See soil structure classes, soil structure grades, and soil structure types. Also see Table 1.

soil structure classes—A grouping of soil structural units or peds on the basis of size. See soil structure, soil structure types, and Table 1.

soil structure grades—A grouping or classification of soil structure on the basis of inter- and intra-aggregate adhesion, cohesion, or stability within the profile. Four grades of structure designated from 0 to 3 are recognized as follows:

0) *Structureless*—no observable aggregation or no definite and orderly arrangement of natural lines of weakness. *Massive*, if coherent; *single-grain*, if noncoherent.

1) *Weak*—poorly formed indistinct peds, barely observable in place.

2) *Moderate*—well-formed distinct peds, moderately durable and evident, but not distinct in undisturbed soil.

3) *Strong*—durable peds that are quite evident in undisturbed soil, adhere weakly to one another, withstand displacement, and become separated when the soil is disturbed.

soil structure types—A classification of soil structure based on the shape of the aggregates or peds and their arrangement in the profile. See soil structure, soil structure classes, soil structure grades, and Table 1.

soil survey—The systematic examination, description, classification, and mapping of soils in an area. Soil surveys are classified according to the kind and intensity of field examination.

soil texture—The relative proportions of the various soil separates in a soil as described by the classes of soil texture shown in Fig. 1. The textural classes may be modified by the addition of suitable adjectives when coarse fragments are present in substantial amounts; for example, "stony silt loam," or "silt loam, stony phase." (For other modifications see coarse fragments.) The sand, loamy sand, and sandy loam are further subdivided on the basis of the proportions of the various sand separates present. The limits of the various classes and subclasses are as follows:

sand—Soil material that contains 85% or more of sand; percentage of silt, plus 1.5 times the percentage of clay, shall not exceed 15.

coarse sand—25% or more very coarse and coarse sand, and < 50% any other one grade of sand.

sand—25% or more very coarse, coarse, and medium sand, and < 50% fine or very fine sand.

fine sand—50% or more fine sand (or) < 25% very coarse, coarse, and medium sand and < 50% very fine sand.

very fine sand—50% or more very fine sand.

loamy sand—Soil material that contains at the upper limit 85 to 90% sand, and the percentage of silt plus 1.5 times the percentage of clay is not less than 15; at the lower limit it contains not less than 70 to 85% sand, and the percentage of silt plus twice the percentage of clay does not exceed 30.

loamy coarse sand—25% or more very coarse and coarse sand, and < 50% any other one grade of sand.

loamy sand—25% or more very coarse, coarse, and medium sand, and < 50% fine or very fine sand.

loamy fine sand—50% or more fine sand (or) < 25% very coarse, coarse, and medium sand and < 50% very fine sand.

loamy very fine sand—50% or more very fine sand.

sandy loam—Soil material that contains either 20% clay or less, and the percentage of silt plus twice the percentage of clay exceeds 30, and 52% or more sand; or < 7% clay, < 50% silt, and between 43% and 52% sand.

coarse sandy loam—25% or more very coarse and coarse sand and < 50% any other one grade of sand.

sandy loam—30% or more very coarse, coarse, and medium sand, but < 25% very coarse sand, and < 30% very fine or fine sand.

fine sandy loam—30% or more fine sand and < 30% very fine sand (or) between 15 and 30% very coarse, coarse, and medium sand.

very fine sandy loam—30% or more very fine (or) > 40% fine and very fine sand, at least half of which is very fine sand and < 15% very coarse, coarse, and medium sand.

loam—Soil material that contains 7 to 27% clay, 28 to 50% silt, and < 52% sand.

silt loam—Soil material that contains 50% or more silt and 12 to 27% clay (or) 50 to 80% silt and < 12% clay.

silt—Soil material that contains 80% or more silt and < 12% clay.

sandy clay loam—Soil material that contains 20 to 35% clay, < 28% silt, and 45% or more sand.

clay loam—Soil material that contains 27 to 40% clay and 20 to 45% sand.

silty clay loam—Soil material that contains 27 to 40% clay and < 20% sand.

sandy clay—Soil material that contains 35% or more clay and 45% or more sand.

silty clay—Soil material that contains 40% or more clay and 40% or more silt.

clay—Soil material that contains 40% or more clay, < 45% sand, and < 40% silt.

soil type—(i) The lowest unit in the natural system of soil classification; a subdivision of a soil series and consisting of or describing soils that are alike in all characteristics including the texture of the A horizon. (ii) In Europe, roughly equivalent to a great soil group.

soil variant—A soil whose properties are believed to be sufficiently different from other known soils to justify a new series name but comprising such a limited geographic area that creation of a new series is not justified.

subsoiling—Breaking of compact subsoils, without inverting them, with a special knife-like instrument (chisel) which is pulled through the soil at depths usually of 12 to 24 inches and at spacings usually of 2 to 5 feet.

swamp—An area saturated with water throughout much of the year but with the surface of the soil usually not deeply submerged. Usually characterized by tree or shrub vegetation. See marsh

terrace—(i) A level, usually narrow, plain bordering a river, lake, or the sea. Rivers sometimes are bordered by terraces at different levels. (ii) A raised, more or less level or horizontal strip of earth usually constructed on or nearly on a contour and supported on the downslope side by rocks or other similar barrier and designed to make the land suitable for tillage and to prevent accelerated erosion. For example, the ancient terraces built by the Incas in the Andes. (iii) An embankment with the uphill side sloping toward and into a channel for conducting water, and the downhill side having a relatively sharp decline; constructed across the direction of the slope for the purpose of conducting water from the area above the terrace at a regulated rate of flow and to prevent the accumulation of large volumes of water on the downslope side of cultivated fields. The depth of the channel, the width of the terrace ridge, and the spacings of the terraces on a field are varied with soil types, cropping systems, climatic conditions, and other factors.

tuff—Volcanic ash usually more or less stratified and in various states of consolidation.

value, color—The relative lightness or intensity of color and approximately a function of the square root of the total amount of light. One of the three variables of color. See Munsell color system, hue, and chroma.

waterlogged—Saturated with water.

water table—The upper surface of ground water or that level below which the soil is saturated with water; locus of points in soil water at which the hydraulic pressure is equal to atmospheric pressure.

water table, perched—The water table of a saturated layer of soil which is separated from an underlying saturated layer by an unsaturated layer.

weathering—All physical and chemical changes produced in rocks, at or near the earth's surface, by atmospheric agents.

NOT TO BE REPRODUCED

EXPLANATION OF PHRASES USED ON INTERPRETATION TABLES

KEY PHRASES	EXPLANATION
AREA RECLAIM	Borrow areas are difficult to reclaim, and revegetation and erosion control on these areas are extremely difficult.
COMPLEX SLOPE	Short and irregular slopes. Planning and construction of terraces, diversions, and other water-control measures are difficult.
CUTBANKS CAVE	Walls of cuts are not stable. The soil sloughs easily.
DEEP TO WATER	Deep to permanent water table during dry season.
DROUGHTY	Soil holds too little water for plants during dry periods.
DUSTY	Soil particles detach easily and cause dust.
ERODES EASILY	Water erodes soil easily.
EXCESS FINES	The soil contains too much silt and clay for use as gravel or sand in construction.
EXCESS HUMUS	Too much organic matter.
EXCESS SALT	The amount of soluable salt in the soil is so high that it restricts the growth of most plants.
EXCESS SODIUM	Exchangeable sodium imparts poor physical properties that restrict the growth of plants.
FAST INTAKE	Water infiltrates rapidly into the soil.
FAVORABLE	Features of the soil are favorable for the intended use.
FLOODS	Soil temporarily flooded by stream overflow, runoff, or high tides.
HARD TO PACK	Difficult to compact.
LOW STRENGTH	The soil has inadequate strength to support loads.
NO WATER	Too deep to ground water.
NOT NEEDED	Practice not applicable.
PERCS SLOWLY	Water moves through the soil slowly, affecting the specified use.
PIPING	The soil is susceptible to the formation of tunnels or pipelike cavities by moving water.
POOR OUTLETS	Surface or subsurface drainage outlets are difficult or expensive to install.
ROOTING DEPTH	A layer that greatly restricts the downward rooting of plants occurs at a shallow depth.
SEEPAGE	Water moves through the soil so quickly that it affects the specified use.
SHRINK-SWELL	The soil expands on wetting and shrinks on drying, which may cause damage to roads, dams, building foundations, or other structures.
SLOPE	Slope too great.
SLOW INTAKE	Water infiltrates slowly into the soil.
SLOW REFILL	Ponds fill slowly because the permeability of the soil is restricted.
SOIL BLOWING	Soil easily moved and deposited by wind.
SUBSIDES	Settlement of organic soils or of soils containing semifluid layers.
THIN LAYER	Suitable soil material is not thick enough for use as borrow material or topsoil.
TOO CLAYEY	Soil slippery and sticky when wet and slow to dry.
TOO SANDY	Soil soft and loose; droughty and low in fertility.
UNSTABLE FILL	Banks of fill are likely to cave in or slough or uneven settlement is likely.
WETNESS	Soil wet during period of use.

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3-75

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Soil Survey Area: Natrona County Area
State: Wyoming

Date: 11/81

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline
- AD HOC BOUNDARY (label)
- Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- County, farm or ranch
- Trail

ROAD EMBLEMS & DESIGNATIONS

- Interstate: 66
- Federal: 287
- State: 52
- Other: 398

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small

PITS

- Gravel pit
- Mine or quarry

CULTURAL FEATURES (cont.)

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label)
- Located object (label)
- Tank (label)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
- Double - line (label): CANAL
- Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial: water, w
- Intermittent: intermittent, int

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

intermittent drainage
subirrigated

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SOIL SYMBOLS

ESCARPMENTS: CeA | FoB2

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown): S

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

RECOMMENDED AD HOC SOIL SYMBOLS

ADVANCE DATA
SUBJECT TO CHANGE

Natrona County - Classification Table
1981 Field Season

Absted	Haplustollic Natrargids, fine, montmorillonitic, mesic
Alcova	Borollic Haplargids, fine-loamy, mixed
Arvada	Ustollic Natrargids, fine, montmorillonitic, mesic
Bachus	Argic Pachic Cryoborolls, fine-loamy, mixed
Bachus Variant	Argic Pachic Cryoborolls, fine-loamy, mixed
Bessemer	Ustollic Haplargids, fine, montmorillonitic, mesic
Bidman	Ustollic Paleargids, fine, montmorillonitic, mesic
Birdsley	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Blazon	Ustic Torriorthents, loamy, mixed (calcareous), frigid, shallow
Boettcher	Borollic Haplargids, fine montmorillonitic
Bone	Ustic Torriorthents, fine, montmorillonitic, (calcareous) mesic
Bosler	Borollic Haplargids, fine-loamy over sandy or sandy-skeletal, mixed
Bowbac	Ustollic Haplargids, fine-loamy, mixed, mesic
Bributte	Typic Torriorthents, clayey, montmorillonitic (calcareous), mesic, shallow
Brownsto 1/	Borollic Calciorthids, loamy-skeletal, mixed
Cabin	Argic Cryoborolls, fine-loamy/sandy or sandy-skeletal, mixed
Cadoma	Ustollic Camborthids, fine, montmorillonitic, mesic
Cadoma Variant	Ustollic Camborthids, fine-loamy, mixed, mesic
Castner	Lithic Haploborolls, loamy-skeletal, mixed
Cathedral	Lithic Haplaborolls, loamy-skeletal, mixed
Chittum	Argic Lithic Cryoborolls, loamy, mixed
Clayburn	Argic Pachic Cryoborolls, fine-loamy, mixed
Cragosen	Ustic Torriorthents, loamy-skeletal, mixed (calcareous), frigid, shallow
Crownest	Lithic Ustic Torriorthents, loamy, mixed, nonacid, frigid
Cushman	Ustollic Haplargids, fine-loamy, mixed, mesic
Decross	Argic Pachic Cryoborolls, fine-loamy, mixed
Delphill	Ustic Torriorthents, fine-loamy, mixed (calcareous), frigid
Diamondville	Borollic Haplargids, fine-loamy, mixed
Diamondville Variant	Borollic Haplargids, fine-loamy, mixed
Effington	Typic Natrargids, fine, montmorillonitic, mesic
Emblem	Typic Calciorthids, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Embry	Ustic Torriorthents, coarse-loamy, mixed, nonacid, mesic
Ethete	Typic Haplargids, fine loamy over sandy or sandy-skeletal, mixed, mesic
Farlow	Typic Cryoborolls, loamy-skeletal, mixed
Forelle	Borollic Haplargids, fine-loamy, mixed
Forkwood	Ustollic Haplargids, fine-loamy, mixed, mesic
Forsey	Argic Cryoborolls, loamy-skeletal, mixed
Forsey Variant	Argic Cryoborolls, loamy-skeletal, mixed

1/ The Brownsto of map units 704 & 705 is taxadjunct to the series because of reddish hues.

ADVANCE DATA
SUBJECT TO CHANGE

Glenberg	Ustic Torrifluvents, coarse-loamy, mixed (calcareous), mesic
Grail	Pachic Argiborolls, fine, montmorillonitic
Greybull	Typic Torriorthents, fine-loamy, mixed (calcareous), mesic
Griffy	Typic Haplargids, fine-loamy, mixed, mesic
Griffy Variant	Typic Haplargids, fine-loamy, mixed, mesic
Haterton	Typic Torriorthents, loamy, mixed (calcareous), frigid, shallow
Haverdad	Ustic Torrifluvents, fine-loamy, mixed (calcareous), mesic
Heldt	Ustertic Camborthids, fine, montmorillonitic, mesic
Hiland	Ustollic Haplargids, fine-loamy over sandy or sandy skeletal, mixed, mesic
Inchau	Argic Cryoborolls, fine-loamy, mixed
Inchau Variant	Argic Pachic Cryoborolls, fine-loamy, mixed
Irigul	Lithic Cryoborolls, loamy-skeletal, mixed
Irigul Variant	Typic Cryoborolls, loamy-skeletal, mixed, shallow
Jocity	Typic Torrifluvents, fine-loamy, mixed (calcareous), mesic
Kather	Borollic Haplargids, fine, montmorillonitic
Keyner	Haplustollic Natrargids, fine-loamy, mixed, mesic
Kezar	Argic Cryoborolls, fine-loamy, mixed
Kezar Variant	Argic Cryoborolls, fine-loamy, mixed
Kishona	Ustic Torriorthents, fine-loamy, mixed (calcareous), mesic
Kishona Variant	Ustic Torriorthents, fine-loamy, mixed (calcareous), mesic
Louviers	Ustic Torriorthents, clayey, montmorillonitic, nonacid, mesic, shallow
Lupinto	Borollic Haplargids, loamy-skeletal, mixed
Middlewood	Borollic Lithic Haplargids, clayey, montmorillonitic
Midway	Ustic Torriorthents, clayey, montmorillonitic (calcareous), mesic, shallow
Moran	Typic Cryumbrepts, loamy-skeletal, mixed
Moslander	Typic Cryaquolls, fine-loamy, mixed
Moyerson	Ustic Torriorthents, clayey, montmorillonitic (calcareous), frigid shallow
Mudray	Typic Natrargids, clayey, montmorillonitic, mesic, shallow
Neldore	Ustic Torriorthents, clayey, montmorillonitic, nonacid, frigid, shallow
Neldore Variant	Ustic Torriorthents, clayey-skeletal, montmorillonitic, nonacid, frigid, shallow
Nielsen	Argic Lithic Cryoborolls, loamy-skeletal, mixed

ADVANCE DATA
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Oceanet	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Orella	Ustic Torriorthents, clayey, mixed (calcareous), mesic, shallow
Otero	Ustic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Pagosa	Mollic Cryoboralf, fine, montmorillonitic
Parkay Variant	Argic Pachic Cryoborolls, loamy-skeletal, mixed
Patent	Ustic Torriorthents, fine-loamy, mixed (calcareous), frigid
Persayo	Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Petrie	Ustertic Torriorthents, fine, montmorillonitic (calcareous), mesic
Pinelli	Borollic Haplargids fine, montmorillonitic
Reeder	Typic Argiborolls, fine-loamy, mixed
Rentsac	Lithic Ustic Torriorthents, loamy-skeletal, mixed (calcareous), frigid
Rock River	Borollic Haplargids, fine-loamy, mixed
Saddle	Typic Haplargids, fine-loamy, mixed, mesic (mod up)
Samsil	Ustic Torriorthents, clayey, montmorillonitic (calcareous), mesic shallow
Shingle	Ustic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Sinkson 1/	Ustic Torriorthents, fine-loamy, mixed (calcareous), frigid (shallow)
Spearfish	Ustic Torriorthents, loamy, mixed (calcareous), mesic (shallow)
Starley	Lithic Cryoborolls, loamy-skeletal, mixed
Stoneham	Ustollic Haplargids, fine-loamy, mixed, mesic
Stunner	Borollic Haplargids, fine-loamy, mixed
Sunup	Lithic Ustic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Tassel	Ustic Torriorthents, loamy, mixed (calcareous), mesic, shallow
Terry	Ustollic Haplargids, coarse-loamy, mixed, mesic
Thedalund	Ustic Torriorthents, fine-loamy, mixed (calcareous), mesic
Thermopolis	Ustic Torriorthents loamy, mixed (calcareous), frigid, shallow
Thoroughfare Variant	Typic Torrifluvents, coarse-loamy, mixed (calcareous), mesic
Torchlight	Vertic Torriorthents, fine, montmorrilonitic, (calcareous), mesic
Uffens	Typic Natrargids, fine-loamy, mixed, mesic
Ulric	Aridic Argiborolls, fine, montmorillonitic
Valent	Ustic Torrirpsamments, mixed, mesic
Vona	Ustollic Haplargids, coarse-loamy, mixed, mesic
Wallson	Typic Haplargids, coarse-loamy, mixed, mesic
Woosley	Argic Cryoborolls, fine-loamy, mixed
Worfman	Borollic Haplargids, loamy, mixed, shallow
Worfman Variant	Borollic Lithic Haplargids, loamy, mixed, shallow
Wyarno	Ustollic Haplargids, fine, montmorillonitic, mesic
Yampa	Typic Haplaquolls, fine-loamy, mixed, frigid
Zigweid	Ustollic Camborthids, fine-loamy, mixed, mesic

1/ The Sinkson of map units 704 & 810 is taxadjunct to the series because of a cambic B horizon.

ADVANCE DATA
SUBJECT TO CHANGE

Natrona County Identification Legend
1981 Field Season

Mapping Unit Symbol		Range Site
202	Arvada - Absted - Bone complex, 0-6%	
	40% Arvada L, 0-6%	Imp. Clay BH & WR
	30% Absted CL, 0-6%	Loamy NP
	15% Bone SL, 0-6%	Imp Clay BH & WR
	Inclusions: 5% Orella CL	Imp. Clay BH & WR
	5% Keyner SCL	Loamy NP
	5% moderately, dp sodic soils	Shallow Loamy NP
203	Cushman - Forkwood association, rolling	
	45% Cushman VFSL, 6-15% sidehill slopes	Loamy NP
	30% Forkwood L, 3-6% footslopes & fans	Loamy NP
	Inclusions: 10% Shingle L	Shallow Loamy NP
	10% Zigweid Sil	Loamy NP
	5% Kishona	Loamy NP
205	Effington - Uffens complex, 0-6%	
	50% Effinton SiCL, 0-6%	Imp. Clay BH & WR
	35% Uffens VFSL, 0-6%	Imp. Clay BH & WR
	Both soils are intermixed on alluvial fans.	
	Inclusions: 15% deep clay loam fluvents low in exchangeable sodium adjacent to drainages.	Loamy BH & WR
212	Hiland SL, 0-6%	Loamy NP
	Inclusions: 5% Bowbac FSL	Loamy NP
	5% Vona	Sandy NP
	5% Keyner	Loamy NP
	10% Forkwood	Loamy NP
213	Vona - Hiland complex, 3-15%	
	40% Vona SL, 6-15% convex slopes	Sandy NP
	40% Hiland SL, 3-6% concave slopes & depressions	Loamy NP
	Inclusions: 10% Valent LS, small scattered pockets	Sands NP
	10% Forkwood SL	Loamy NP

BH & WR = Big Horn & Wind River Basin 5-9" precipitation zone
NP = Northern Plains 10-14" precipitation zone
HPSE = High Plains Southeast 10-14" precipitation zone
FMSE = Foothills & Mountains Southeast 15-19" precipitation zone
FME = Foothills and Mountains East 15-19" precipitation zone

ADVANCE DATA
SUBJECT TO CHANGE

217	Uffens saline - Typic Torriorthents saline complex, 0-3%	
	50% Uffens saline VFSL, 0-3% fans adjacent to bottoms	Saline Lowland BH & WR
	30% Typic Torriorthents saline FSL, 0-3% wet bottoms	Saline Lowland BH & WR
	Inclusions: 10% slickspots	Class VIII
	5% Effington SiCL	Imp. Clay BH & WR
	5% very strongly alkaline clay loam soils	Saline Lowland BH & WR
222	Forkwood - Wyarno complex, 0-6%	
	45% Forkwood L,	Loamy NP
	30% Wyarno SICL	Clayey NP
	Inclusions: Bidman	Clayey NP
	Absted & Keyner	Loamy NP
223	Lupinto - Bosler complex, 6-30%	
	50% Lupinto GRL, 10-30% on ridges, convex slopes, drainage sideslopes	Shallow Loamy HPS
	30% Bosler FSL, 6-10% benches and concave slopes	Loamy HPSE
	Inclusions: 10% dp gravelly soils on ridges	Loamy HPSE
	5% shallow gravelly soils on ridges	Shallow Loamy HPS
	5% sandy gravelly soils in drainages	Sandy HPSE
225	Ethete - Emblem complex, 0-6%	
	40% Ethete FSL, 30% Emblem L,	Loamy BH & WR
	Both soils are intermingled on the landscape.	Shallow Loamy BH WR
	Inclusions: 10% Garland	Loamy BH & WR
	10% Stony soils adjacent to drainages	Loamy BH & WR
	5% Uffens VFSL	Imp. Clay BH & WR
	5% soils like Ethete except the gravels occur at a shallower depth and the profile contains less carbonate.	Loamy BH & WR

ADVANCE DATA
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226	Bidman - Absted complex, 0-6%	
	50% Bidman L,	Loamy NP
	25% Absted CL,	Loamy NP
	Both soils are intermixed on the landscape.	
	Inclusions: Vona SL	Sandy NP
	A soil like Ulm except with a thicker solum	Clayey NP
	A soil like Absted except moderately deep	Loamy NP
	Total inclusions 25%	
246	Heldt-Petrie complex, 1-6%	
	55% Heldt CL, 1-6%	Clayey NP
	25% Petrie CL, 1-6%	Imp. Clay BH & WR
	Both soils are intermixed on alluvial fans.	
	Inclusions: 5% Zigweid	Loamy NP
	5% dp clayey soils	Dense Clay NP
	5% Absted	Loamy NP
	5% deep clayey soils that receive additional moisture as overflow	Clayey Overflow NP
301	Orella-Rock Outcrop complex, 3-30%	(Shale NP?)
	40% Orella CL, 3-30%	Imp. Clay BR & WR
	30% Rock Outcrop (shale)	Class VIII
	Inclusions: 10% Cadoma alluvial fans & remnant caps	Imp. Clay BH & WR
	10% Petrie and Bone alluvial fans	Imp. Clay BH & WR
	5% Heldt C	Clayey NP
	5% Tassel SL	Shallow Sandy NP
302	Shingle-Tassel-Rock Outcrop complex, 10-40%	
	30% Shingle L, steep slopes over siltstone	Shallow Loamy NP
	25% Tassel SL, steep slopes over sandstone	Shallow Sandy NP
	20% Rock Outcrop	Class VIII
	The soils and rock outcrop are intermixed on the landscape.	
	Inclusions: 10% Kishona colluvial pockets and short fans adjacent to Rock Outcrops.	Loamy NP
	10% Thedalund sidehill slopes	Loamy NP
	5% shallow sodic soils below shale outcrops	Imp. Clay BH & WR
308	Haterton-Cragosen-Worfman complex, 15-60%	
	35% Haterton GR SL, south facing ridges & slopes	Shallow Loamy BH & WR
	30% Cragosen GRL, north & east slopes	Shallow Loamy HPSE
	20% Worfman L, north slopes	Shallow Loamy HPSE
	Inclusions: 10% dp gravelly soils on footslopes & in drainages.	Loamy NP
	5% shale outcrop	Class VIII

ADVANCE DATA
SUBJECT TO CHANGE

311	Mudray-Bributte-Birdsley complex, 6-30%	
	35% Mudray SiCL,	Saline Upland BH & WR
	25% Bributte SiCL,	Saline Upland BH & WR
	20% Birdsley, L.	Saline Upland BH & WR
	These soils are intermixed on the landscape.	
	Inclusions: 10% mod dp, very strongly alkaline soils lower slopes	Saline Upland BH & WR
	10% shale outcrop	Class VIII
313	Haverdad-Glenberg complex, 0-3%.	
	50% Haverdad SIL,	Loamy NP
	40% Glenberg SIL,	Loamy NP
	The soils are intermixed on the landscape.	
	Inclusions: 5% Kishona CL Alluvial fans	Loamy NP
	5% Wet soils in bottoms	Subirrigated NP
316	Rentsac-Rock Outcrop complex, steep (30-60%)	
	55% Rentsac GRL,	Very Shallow HPSE
	30% Rock Outcrop	Shallow Loamy HPSE Class VIII
	Inclusions: 10% Thermopolis steeply sloping redbeds	Shallow Loamy HPSE
	5% gravelly & stoney soils adjacent to & in drainages	Loamy HPSE
317	Thermopolis-Rock Outcrop complex, 30-60%	Shallow Loamy HPSE
	40% Thermopolis L,	Class VIII
	30% Rock Outcrop	Loamy HPSE
	Inclusions: 15% Sinkson FSL colluvial slopes & narrow valleys	Loamy HPSE
	10% deep stony soils terraces	Shallow Loamy HPSE
	5% Rentsac GRSL	
318	Sinkson-Thermopolis complex, 6-30%	
	40% Sinkson L, dissected fans & valleys	Loamy HPSE
	25% Thermopolis L, ridges & steep hillsides	Shallow Loamy HPSE
	Inclusions: 15% Rock Outcrop	Class VIII
	10% deep stony soils benches	Loamy HPSE
	5% Rentsac GRSL sandstone ledges	Shallow Loamy HPSE
	5% deep loamy saline soils	Saline Upland HPSE
319	Rentsac-Blazon complex, 15-40%	
	50% Rentsac VGRL, 20-40% dip slopes	Shallow Loamy HPSE
	25% Blazon GRL, 15-40% steep ridges & hillsides	Shallow Loamy HPSE
	Inclusions: 15% Rock Outcrop	Class VIII
	10% shallow clayey soils hillsides	Shallow Clayey HPSE

ADVANCE DATA
SUBJECT TO CHANGE

326	Crownest-Blazon complex, 10-40%	
	50% Crownest, variant, SL, 20-40% steep slopes	Very Shallow HPSE
	25% Blazon L, 10-30% ridges at base of steep slopes	Shallow Loamy HPSE
	Inclusions: 10% Rock Outcrop	Class VIII
	10% Worfman low ridges	Shallow Loamy HPSE
	5% moderately dp and dp sandy loam soils in drainages and concave pockets	Sandy HPSE
328	Neldore-Moyerson-Rock Outcrop complex, 10-40%	
	30% Neldore CL, 10-30% hillsides on noncalcareous shales	Shallow Clayey HPSE
	25% Moyerson SiC, 10-30% hillsides on calcareous shales	Shallow Clayey HPSE
	20% Rock Outcrop	Class VIII
	Inclusions: 10% dp channery loam soils on colluvial fans & adjacent to drainages.	Loamy HPSE
	5% Blazon loam	Shallow Loamy HPSE
	10% shallow clayey channery soils	Shallow Clayey HPSE
332	Brownsto-Lupinto complex, 6-40%	
	50% Brownsto GRL, 10-40% sidehills	Shallow? Loamy HPSE
	25% Lupinto GRL, 6-20% sidehills & ridgecrests	Shallow Loamy HPSE
	Inclusions: 10% Cragosen ridgecrests & sidehills	Shallow Loamy HPSE
	10% dp very gravelly & cobbly soils hillsides	Shallow Loamy HPSE
	5% deep soils on steep slopes in snow pack areas	Overflow HPSE (?)
337	Sunup-Rock Outcrop-Kishona complex, 10-40%	
	30% Sunup VGRL, 10-30% hillsides	Shallow Loamy NP
	25% Rock Outcrop	Class VIII
	20% Kishona CL, 10-20% hillsides, narrow drainages & colluvial pockets	Loamy NP
	Inclusions: 10% Shingle & shallow red soils	Shallow Loamy NP
	10% Forkwood L,	Loamy NP
	5% Spearfish L,	Shallow Loamy NP
388	Forelle L, 2-9%	Loamy HPSE
	Inclusions: Diamondville, Delphil, Patent	Loamy HPSE
	Alcova & Bosler	Loamy HPSE
	Pinelli swales & drainages	Loamy FMSE
	Total percent of inclusions is about 20 percent.	
389	Blazon-Diamondville complex, 3-20%	Shallow Loamy HPSE
	40% Blazon L, 6-20% ridge tops & sideslopes	Loamy HPSE
	40% Diamondville L, 3-20% footslopes	Loamy HPSE
	Inclusions: 10% Forelle L, swales	Loamy FMSE
	10% Delphill and Kishona sideslopes	

ADVANCE DATA
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402	Thedalund-Shingle-Kishona complex, 6-40%	
	35% Thedalund CL, 10-30% sideslopes & fans	Loamy NP
	30% Shingle CL, 6-40% ridges & upper sideslopes	Shallow Loamy NP
	20% Kishona CL, 6-20% sideslopes & fans	Loamy NP
	Inclusions: 10% Cushman VFSL	Loamy NP
	5% Forkwood L	Loamy NP
425	Yampa L, 0-4%	Subirrigated FMSE
	Inclusions: Bosler, Pinelli, Forelle, Kishona & Ulric	Loamy HPSE
		Loamy FMSE
	Total inclusions is 20%.	
435	Embry-Vona-Tassel complex, 5-20%	
	50% Embry	Sandy NP
	Vona	Sandy NP
	25% Tassel	Shallow Sandy NP
	Inclusions: Not yet identified.	
458	Rentsac-Thermopolis-Rock Outcrop complex, steep	
	40% Rentsac GRFSL, 10-30% dip slopes	Shallow Loamy HPSE
	30% Thermopolis CHL, 10-30% sideslopes	Shallow Loamy HPSE
	15% Rock Outcrop	Class VIII
	Inclusions: 5% gypsic soils	Shallow Loamy HPSE
	5% Sinkson	Loamy HPSE
	5% dp gravelly soils	Shallow Loamy HPSE
475	Ulric-Grail complex, 2-15%	
	60% Ulric rounded ridges 6-15%	Loamy FME
	30% Grail drainages 2-10%	Loamy FME
	Inclusions: 10% deep wet clayey soils adjacent to springs and drains	Subirrigated 15-19 FME
489	Rock River-Worfman complex, rolling	
	55% Rock River SL, 2-15% terraces & sideslopes	Sandy HPSE
	25% Worfman SL, 2-15% terraces breaks & sideslopes	Shallow Sandy HPSE
	Inclusions: 10% dp loamy soils in swales	Loamy HPSE
	5% moderately dp soils sidelsopes	Loamy HPSE
	3% course loamy soils	Sandy HPSE
	2% Rock Outcrop	Class VIII
600	Cadoma Variant-Keyner complex, 2-12%	
	Rolling uplands underlain by very strongly alkaline sandy shale	
	50% Cadoma Variant VFSL, 2-12% convex slopes	Loamy NP*
	40% Keyner SCL 2-12% concave slopes	Loamy NP
	Inclusions: 5% Orella CL on ridges	Imp. Clay BH & WR
	5% Arvada CL on foot slopes	Imp. Clay BH & WR
	* Site has loamy grasses; however, major shrub is birdfoot sagebrush	

ADVANCE DATA
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601	Louviers and Midway soils, 10-40%	
	Clay shale uplands, escarpments, and eroded shale breaks	
	70% Louviers C and/or Midway CL	Shale NP
	20% shale outcrop	Class VIII
	Inclusions: 5% Cadoma CL on footslopes	Imp. Clay BH & WR
	5% Arvada CL on footslopes	Imp. Clay BH & WR
602	Hiland loamy sand, 2-15%	Sandy NP
	Stabilized dune topography	
	Inclusions: 10% Vona LS	Sandy NP
	10% Valent LS	Sands NP
604	Farlow-Starley complex, 10-30%	
	Colluvial limestone slopes	
	60% Farlow CB-L	Coarse Upland FME
	20% Starley STV-L, upper slopes and ridges	Shallow Loamy FME
	Inclusions: 10% limestone outcrop	Class VIII
	10% soils similar to Farlow but with loamy surfaces	Loamy FME
605	Parkay Variant-Rubbleland Association, sloping to steep.	
	Rubble and colluvial slopes beneath outcrops of quartzitic sandstone	
	55% Parkay Variant BY-L, 8-30%	Loamy FME
	20% Rubbleland at top of slopes and steep slope breaks	Class VIII
	Inclusions: 10% wet bouldery soils	Subirrigated FME
	10% soils similar to Parkay Variant with very bouldery surfaces	Coarse Upland FME
	Also included in the Rubbleland is 5% very shallow soils.	Very Shallow FME
606	Kezar Variant-Irigul-Clayburn Association, hilly	
	Hills in the Bighorn Mountains underlain by igneous bedrock	
	30% Kezar Variant L, 5-30% slopes	Loamy FME
	25% Irigul GRV-L, 5-35% ridges	Shallow Igneous FME
	25% Clayburn SL, 5-15% concave bottoms	Loamy FME
	Inclusions: 10% Igneous outcrop	Class VIII
	5% Wet soils in drains	Subirrigated FME
	5% Stoney soils similar to Clayburn in drains	Loamy FME
607	Cathedral very gravelly loam, 20-45%	Shallow Igneous FME
	Igneous uplifts.	
	Inclusions: 10% igneous outcrop on ridges and vertical canyon walls	Class VIII
	10% Kezar Variant L on concave areas	Loamy FME
	5% deep, poorly drained soils adjacent to streams	Subirrigated FME

ADVANCE DATA
SUBJECT TO CHANGE

609	Clayburn-Moslander Association, level to gently sloping Alluvial bottoms	
	60% Clayburn L, 3-8% alluvial valley fans	Loamy FME
	25% Moslander L, 0-3% adjacent to streams and springs	Subirrigated FME
	Inclusions: 10% Woosley	
	5% Wet Stoney Soils	
611	Boettcher-Brownsto complex, 10-30% Hills covered by a cobbly strath, underlain by sedimentary bedrock	
	60% Boettcher CBV-CL	Shallow Loamy HPSE
	25% Brownsto CB-L,	Shallow Loamy HPSE
	Both soils are intermixed on the landscape.	
	Inclusions: 5% Grail CL on concave areas	Loamy FME
	5% Shallow skeletal soils on ridges	Shallow Loamy HPSE
	5% Rock Outcrop	Class VIII
612	Combined with 458.	
700	ROck outerop	Class VIII
	Hard sandstone bedrock	
	Inclusions: 15% pockets of soil	
701	Griffy Variant-Kishona Variant Association, gently sloping to moderately steep. Relict terraces and gullied shoulders	
	55% Griffy Variant SCL, 1-6% on terraces	Shallow Loamy BH & WR
	35% Kishona Variant CL, 6-12% on gullied shoulders	Shallow Loamy BH & WR
	Inclusions: 5% Emblem L, intermixed with Griffy	Loamy BH & WR
	5% Saddle L, on ridges	Loamy BH & WR
	Griffy variant - thin solum	
702	Forelle-Lupinto Association rolling Remnant knolls and associated fans	
	50% Forelle L, 4-10% on valley fans	Loamy HPSE
	35% Lupinto GR-L, 10-18% on remmant knolls	Shallow Loamy HPSE
	Inclusions: 10% Diamondville on toeslopes of knolls	Loamy HPSE
	5% Worfman on tops of knolls	Shallow Loamy HPSE
703	Diamondville Variant-Rentsac-Worfman Variant complex, 4-20% Dipslopes of Frontier sandstone	
	30% Diamondville Variant SL, 4-12% lower dipslopes	Loamy HPSE
	25% Rentsac GRV-SCL, 6-20% upper dipslopes and ridges	Shallow Loamy HPSE
	20% Worfman Variant SL, 6-15% upper dipslopes	Shallow Loamy HPSE
	Inclusions: 10% Rock River SL, lower dipslopes and swales	Loamy HPSE
	10% Shallow clayey soils over shale on backslopes and swales	Shallow Loamy HPSE
	5% Rock outcrop intermixed	Class VIII
	Diamondville Variant - hard sandstone contact.	

ADVANCE DATA
SUBJECT TO CHANGE

704 Sinkson-Brownsto* Association, level to gently sloping Alluvial fans and associated small remnant knolls.

65% Sinkson L on alluvial fans	Loamy HPSE
25% Brownsto GR-L on gravelly knolls and terraces	Shallow Loamy HPSE
Inclusions: 10% deep stony skeletal soils along drainages	Shallow Loamy HPSE

*Brownsto taxadjunct - 5-YR hues

705 Brownsto*-Thermopolis Association, gently sloping to steep
Relict strath terraces overlying redbeds

65% Brownsto GR-L, 2-12% on terrace tops	Shallow Loamy HPSE
20% Thermopolis L, 10-25% on terrace shoulders	Shallow Loamy HPSE
Inclusions: 5% Rentsac CB-L, terrace shoulders	Shallow Loamy HPSE
5% Rock outcrop on terrace shoulders	Class VIII
5% Sinkson L, on toeslopes below terrace	Loamy HPSE

* Brownsto taxadjunct - 5-YR hues

706 Rentsac, thin-Rock Outcrop-Rentsac complex, 5-30%
Tilted Tensleep sandsone plains

55% Rentsac, thin, GR-L 5-25%	Very Shallow HPSE
20% Rock Outcrop 10-30%	Class VIII
10% Rentsac GR-L 5-15%	Shallow Loamy HPSE
Inclusions: 5% Thermopolis GR-L on remnant mounds of the Chugwater formation	Shallow Loamy HPSE
5% Rock River GR-SCL concave areas	Loamy HPSE
5% deep loamy soils, high in calcium carbonate	Shallow Loamy HPSE

707 Rock outcrop-Rentsac thin association, steep to very steep. Steep canyons cutting through tilted plains of Tensleep sandstone

60% Rock outcrop, 30-100% on sandstone cliffs and bouldery rubble	Class VIII
30% Rentsac thin GR-L, 10-30% on benches and slopes	Very Shallow HPSE
Inclusions: 10% deep loamy soils in bottoms of canyons and in pockets in Rockland areas	Loamy HPSE

Starley-Rock Outcrop complex, 4-25%
708 Limestone ridges and hillslopes

60% Starley CB-L, 4-20% on ridges and hillsides	Shallow Loamy FME
20% limestone outcrop 8-25%	Class VIII
Inclusions: 10% very shallow soils similar to Starley intermixed with bedrock	Very Shallow FME
10% deep, red, colluvial soils in concave areas	Loamy FME

ADVANCE DATA
SUBJECT TO CHANGE

709 Forsey-Starley complex, 8-35%
Colluvial slopes below outcrops of quartzitic sandstone and limestone

60% Forsey FL-L, 15-35%	colluvial slopes	Coarse Upland FME
25% Starley GR-SL 8-25%	ridges	Shallow Loamy FME
Inclusions: 5% Woosley L	on narrow valley bottoms	Loamy FME
5% Rock outcrop	at tops of colluvial slopes	Class VIII
5% Red colluvial soils	intermixed	Loamy FME

710 Decross-Woosley Association, sloping.
Remnant terraces and associated fans

45% Decross L, 5-15%	fans	Loamy FME
35% Woosley L, 2-15%	terraces	Loamy FME
Inclusion: 10% deep soils similar to Woosley in swales on the terraces		Loamy FME
10% wet soils along streams and springs		Subirrigated FME

711 Castner-Rock Outcrop complex, 5-25%
Tilted plains of Tensleep sandstone

55% Castner GR-L	on tilted sandstone plains	Very Shallow FME
25% Rock outcrop	intermixed	Class VIII
Inclusions: 10% deep loamy soils	in concave areas	Loamy FME
10% shallow loamy soils with <35% coarse fragments		Shallow Loamy FME

712 Inchau-Clayburn-Chittum complex, 4-20%
Alternating broad dipslopes and short steep strike slopes

35% Inchau FSL, 6-20%	dipslopes	Loamy FME
30% Clayburn L, 4-15%	swales below strike slope	Loamy FME
20% Chittum FSL, 4-10%	upper end of dipslope	Shallow Loamy FME
Inclusions: 5% rock outcrop	on strike slopes	
5% Nielsen STV-L	on ridges	Very Shallow FME
5% deep calcareous loamy soils	in swales	Loamy FME

713 Bachus-Clayburn Association, undulating
Broad mountain valleys

60% Bachus L, 5-15%	convex slopes	Loamy FME
25% Clayburn L, 2-6%	concave slopes	Loamy FME
Inclusions: 10% Moslander L	adjacent to streams and springs	Subirrigated FME
5% Woosley L	on slope breaks	Loamy FME

714 Brownsto-Rentsac thin complex 15-40%
Steep, gullied, calcareous sedimentary beds.

55% Brownsto GRV-L, 20-40%	colluvial slopes	Shallow Loamy HPSE
30% Rentsac, thin, CB-L, 15-30%	ridges	Very Shallow HPSE
Inclusions: 10% rock outcrop	on ridges	Class VIII
5% deep loamy soils	in gully bottoms	Loamy HPSE

ADVANCE DATA
SUBJECT TO CHANGE

801	Bributte gravelly clay loam, 5-40%	Shallow Loamy BH & W
	Shale escarpments, knolls and ridges	
	Inclusions: 10% Greybull CL in swales and drainageways	Loamy BH & WR
	10% clay loam soils < 5 inches deep, intermixed.	Shale BH & WR
802	Bessemer sandy loam, 1-10%	Loamy NP
	Undulating plains.	
	Inclusions: 10% Absted SL in swales	Loamy NP
	5% Forkwood SL in swales	Loamy NP
804	Neldore Variant-Rock Outcrop complex, 3-10%	
	Dipslopes of Mowry and Thermopolis shales	
	60% Neldore Variant CNV-CL, 3-10% plane slopes	Shallow Loamy NPSE
	20% shale outcrop on ridges and escarpments	Class VIII
	Inclusions: 10% very shallow channery clay soils on convex slopes	Very Shallow HPSE
	10% Neldore clay loam intermixed	Shallow Loamy HPSE
805	Rock Outcrop-Neldore Variant complex, 10-60%	
	Escarpments of Mowry and Thermopolis shales	
	50% shale outcrop	Class VIII
	35% Neldore Variant CNV-CL	Very Shallow HPSE
	Inclusions: 15% calcareous clay loams similar to Neldore Variant on toeslopes of 10-25%	Shallow Loamy HPSE
806	Patent-Blazon complex, 3-15%	
	Uplifted shale and sandstone beds partially covered by loess.	
	60% Patent VFSL on fans and swales	Loamy HPSE
	20% Blazon FSL on knolls and ridges	Shallow Loamy HPSE
	Inclusions: 10% Bentsac GR-SL on knolls and ridges	Shallow Loamy HPSE
	5% Rock outcrop on knolls and ridges	Class VIII
	5% very strongly alkaline soils similar to Patent	Saline Upland HPSE
809	Combined with 706.	
810	Sinkson loam, 0-6%	Loamy HPSE
	Alluvial fans and low terraces	
	Inclusions: 5% shallow, very gravelly sandy loams on knolls and ridges	Shallow Loamy HPSE
	5% Brownsto GR-L on knolls and ridges	Shallow Loamy HPSE
	5% rock outcrop on ridges	
815	Moran-Rock Outcrop complex, 10-40%	
	Forested mountain canyons where snow accumulates	
	60% Moran CL-L, 10-40% canyon slopes	Woodland
	20% Igneous outcrop 25-40% canyon Slopes	Class VIII
	Inclusions: 10% shallow, very cobbly loams on steep convex slopes and ridges	Woodland
	10% poorly drained loams in drainageways	Subirrigated FME

ADVANCE DATA
SUBJECT TO CHANGE

816 Cabin-Irigul Variant complex, 6-40%
Mountain sides and ridges over igneous and gneiss bedrock

60% Cabin L, 6-30% on mountain sides	Shallow Loamy FME
30% Irigul Variant CBV-SL 15-40% on ridges and steep mountainsides	Shallow Igneous FME
Inclusions: 5% rock outcrop on ridges and steep slopes	Class VIII
5% Clayburn L 15-40% on lower slopes, in draws and adjacent to drainageways	Loamy FME
Small percent of wet loamy soils in drainage ways.	Subirrigated FME

817 Combined with 713.

903 Bachus Variant-Forsey Variant complex, 4-20%
Dipslopes on Flathead sandstone

45% Bachus Variant loam, lower dipslopes	Loamy FME
30% Forsey Variant FL-L, upper dipslopes	Shallow Loamy FME
Inclusions: 15% Nielsen FL-SL on ridges	Very Shallow FME
5% deep flaggy clay soils	Loamy FME
5% sandstone outcrop on ridges	Class VIII

904 Inchau Variant-Pagosa association, undulating to rolling
3-20% Dipslopes of Flathead sandstone covered by meadows and forest

50% Inchau Variant L open meadows with large boulders	Loamy FME
30% Pagosa L Woodland	Woodland
Inclusions: 10% soils similar to Pagosa with more than 35% cobbles and stones	Woodland
10% sandstone outcrop ridges and strike slopes	

908 Chittum-Nielsen-Rock Outcrop complex, 2-10%
Rolling ridges on Flathead sandstone

40% Chittum loam	Shallow Loamy FME
30% Nielsen loam	Very Shallow FME
15% hard sandstone outcrops	Class VIII
Inclusions: 10% Bachus L in swales	Loamy FME
5% Soils similar to Chittum underlain by soft sandstone	Shallow Loamy FME

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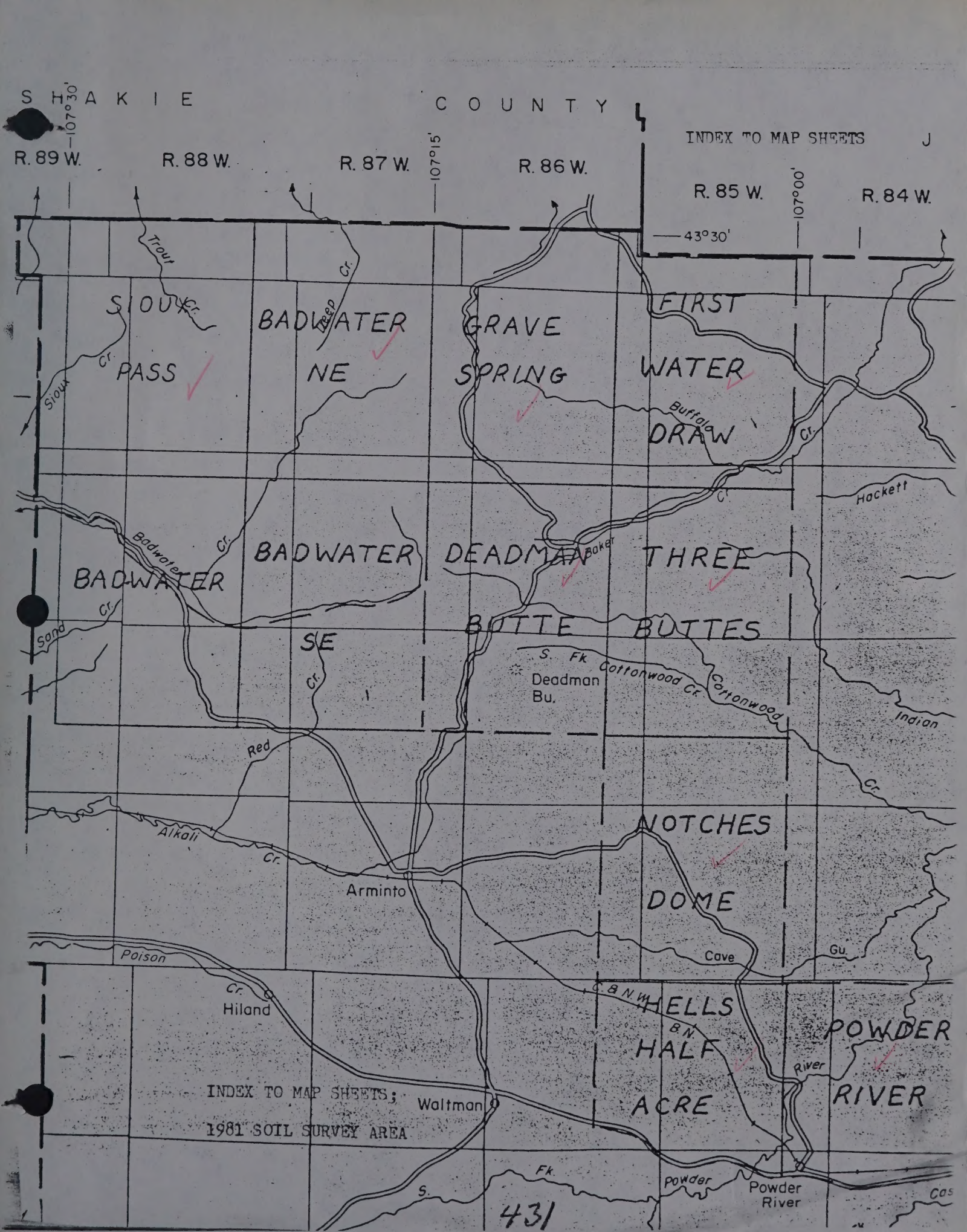
SHAKIE COUNTY
INDEX TO MAP SHEETS J
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Trout Cr.
Deep Cr.
Sioux Cr.
Sioux Cr.
SIOUX PASS
BADWATER NE
GRAVE SPRING
FIRST WATER
Buffalo Cr.
DRAW
Hackett
Badwater Cr.
BADWATER
BADWATER SE
DEADMAN
Baker
THREE BUTTES
BUTTE
Sand Cr.
Cr.
S. Fk Cottonwood Cr.
Deadman Bu.
Cottonwood Cr.
Indian Cr.
Red
Alkali Cr.
NOTCHES DOME
Arminto
Poison Cr.
Hiland
Cave
Gu.
C & N W
B. N.
HELLS HALF ACRE
POWDER RIVER
River
INDEX TO MAP SHEETS; 1981 SOIL SURVEY AREA
Waltman
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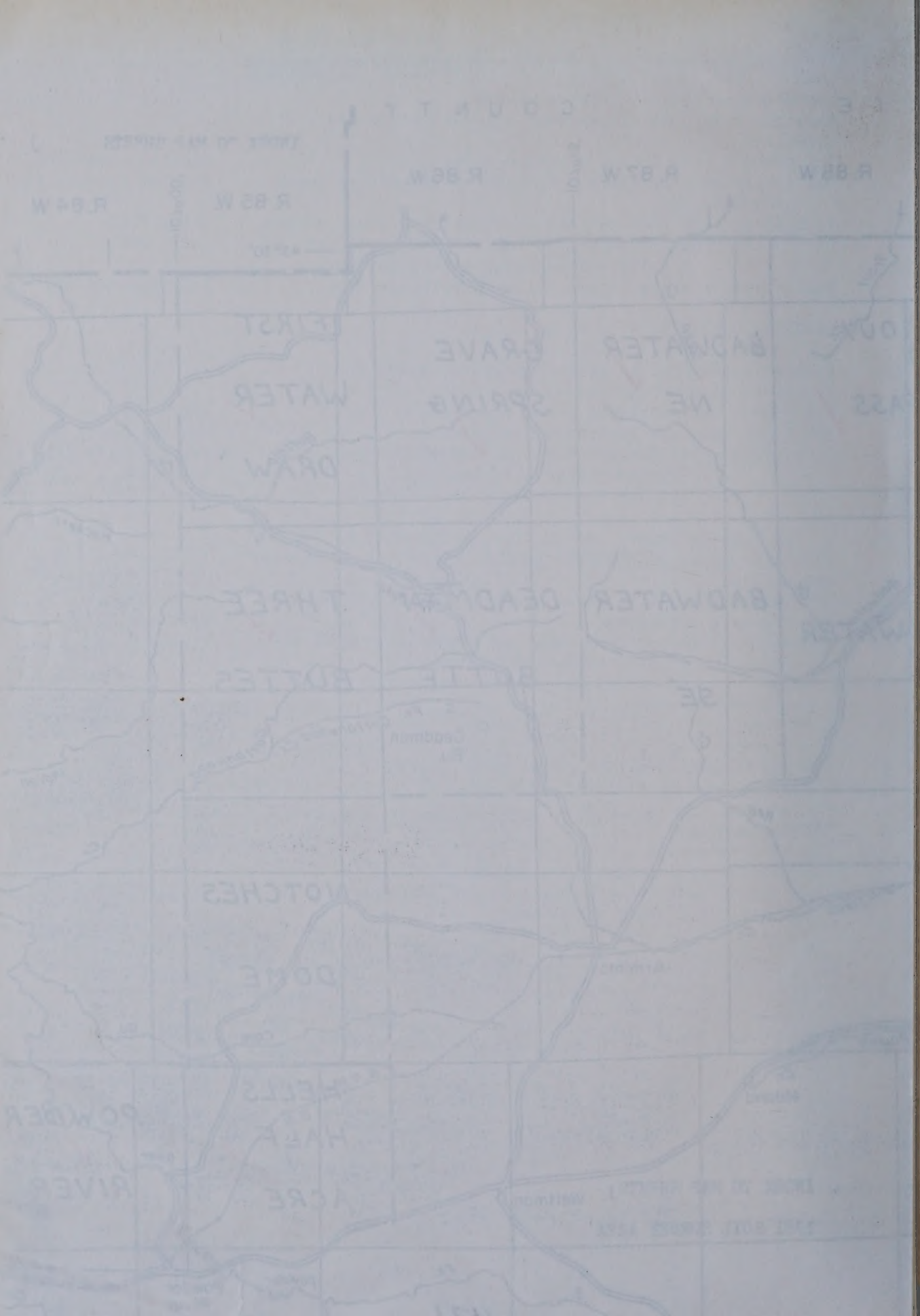

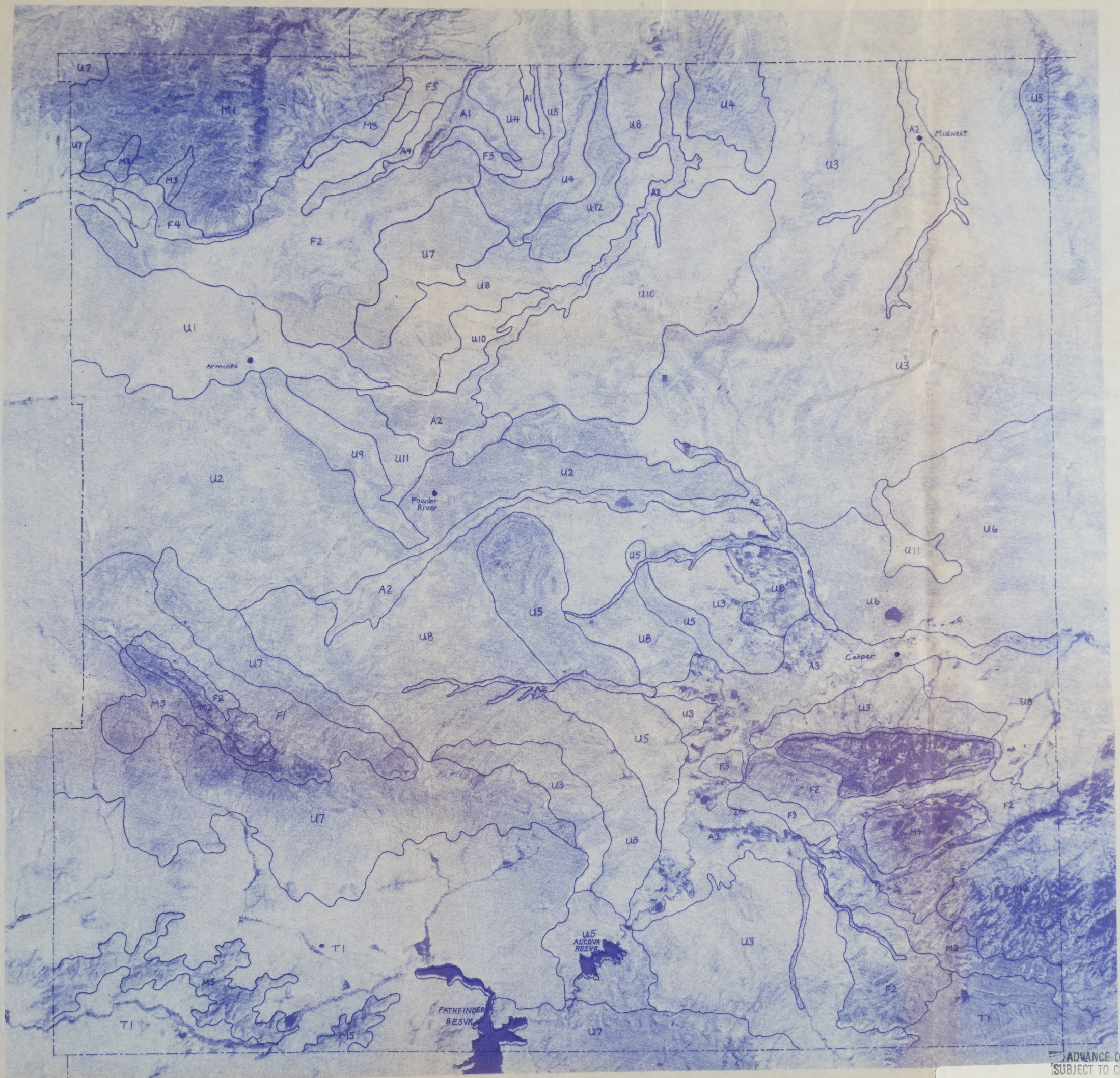

GENERAL SOILS MAP

ADVANCE DATA
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NATRONA COUNTY

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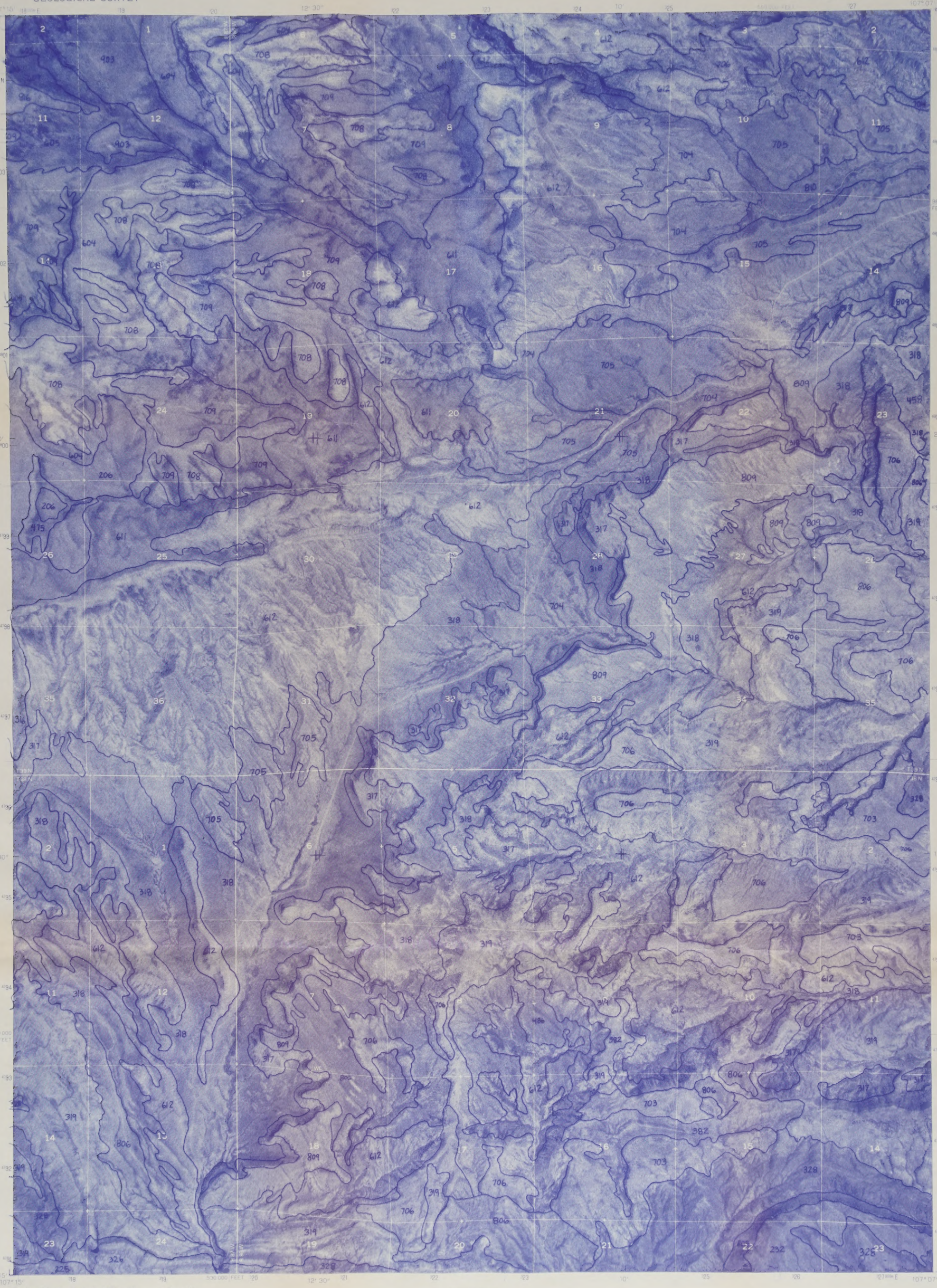
GEOLOGICAL SURVEY

DEADMAN BUTTE QUADRANGLE
WYOMING
7.5 MINUTE SERIES ORTHOPHOTOQUAD



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Projection and 10,000-foot grid ticks: Wyoming coordinate system, east central zone (transverse Mercator) 1000-meter Universal Transverse Mercator grid ticks, zone 13. 1927 North American datum

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NORTH

WYOMING

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1979

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POWDER RIVER QUADRANGLE
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HELLS HALF ACRE, WYO

WELTON SQ

BLM

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NOTCHES DOME QUADRANGLE
WYOMING
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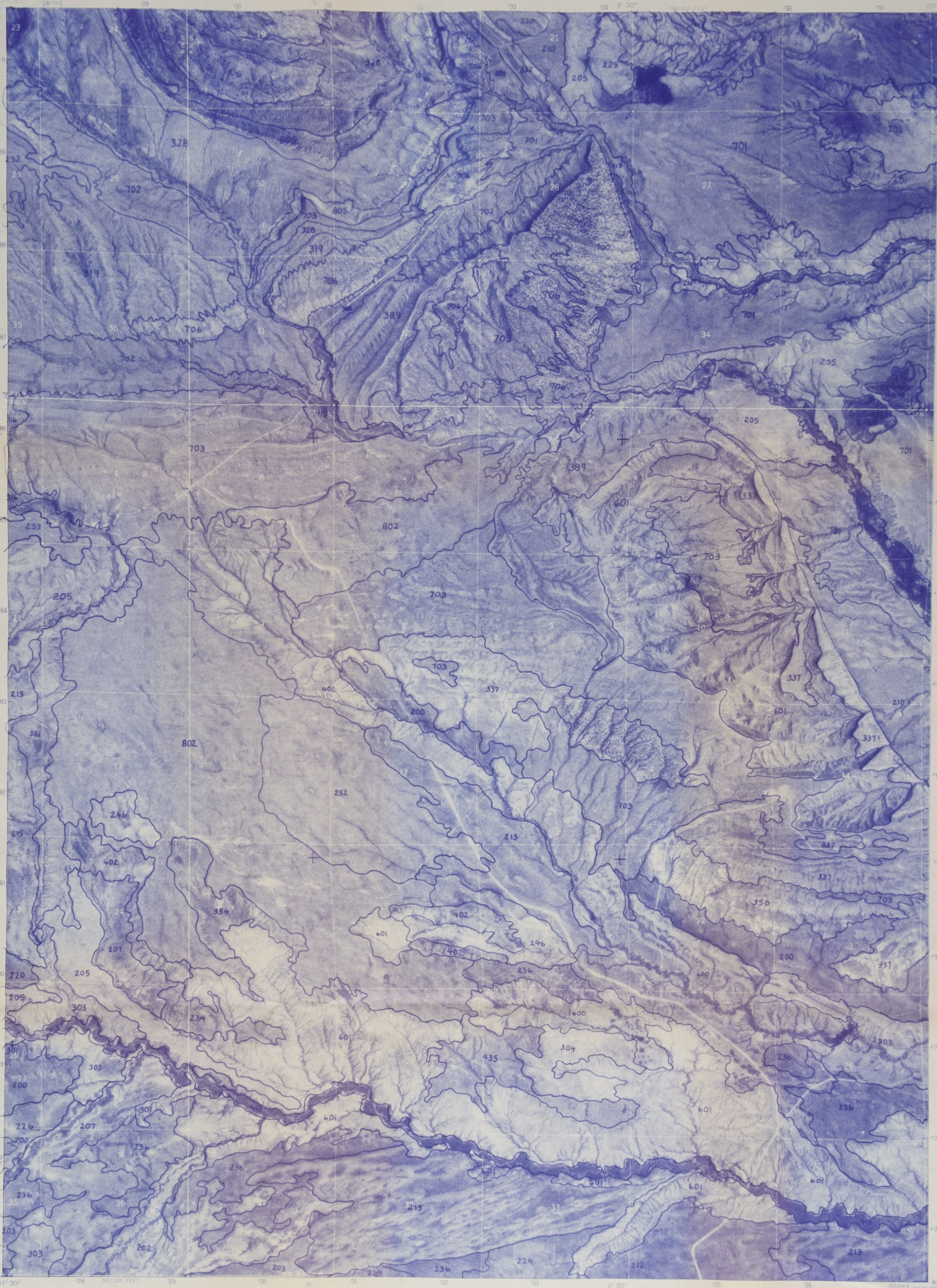

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Projection and 10,000-foot grid ticks: Wyoming
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1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

NORTH

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1 MILE
1 KILOMETER

NORTH

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1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

NORTH

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FIRST WATER DRAW QUADRANGLE

WYOMING

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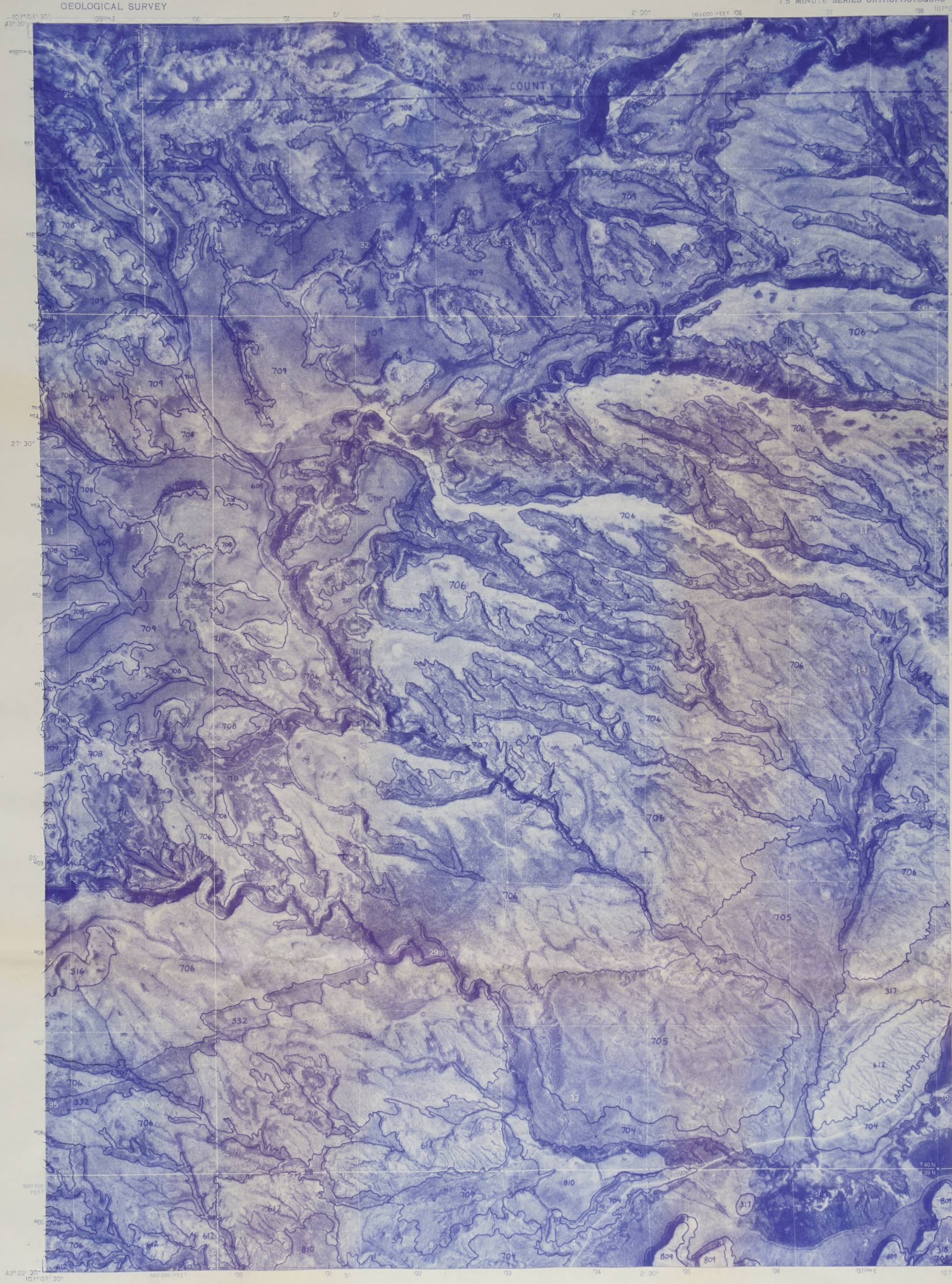

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1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

NORTH

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SIOUX PASS QUADRANGLE
WYOMING
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Orthophotograph prepared from 1:80,000-scale aerial photographs taken June 27, 1979

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1 MILE
1 KILOMETER

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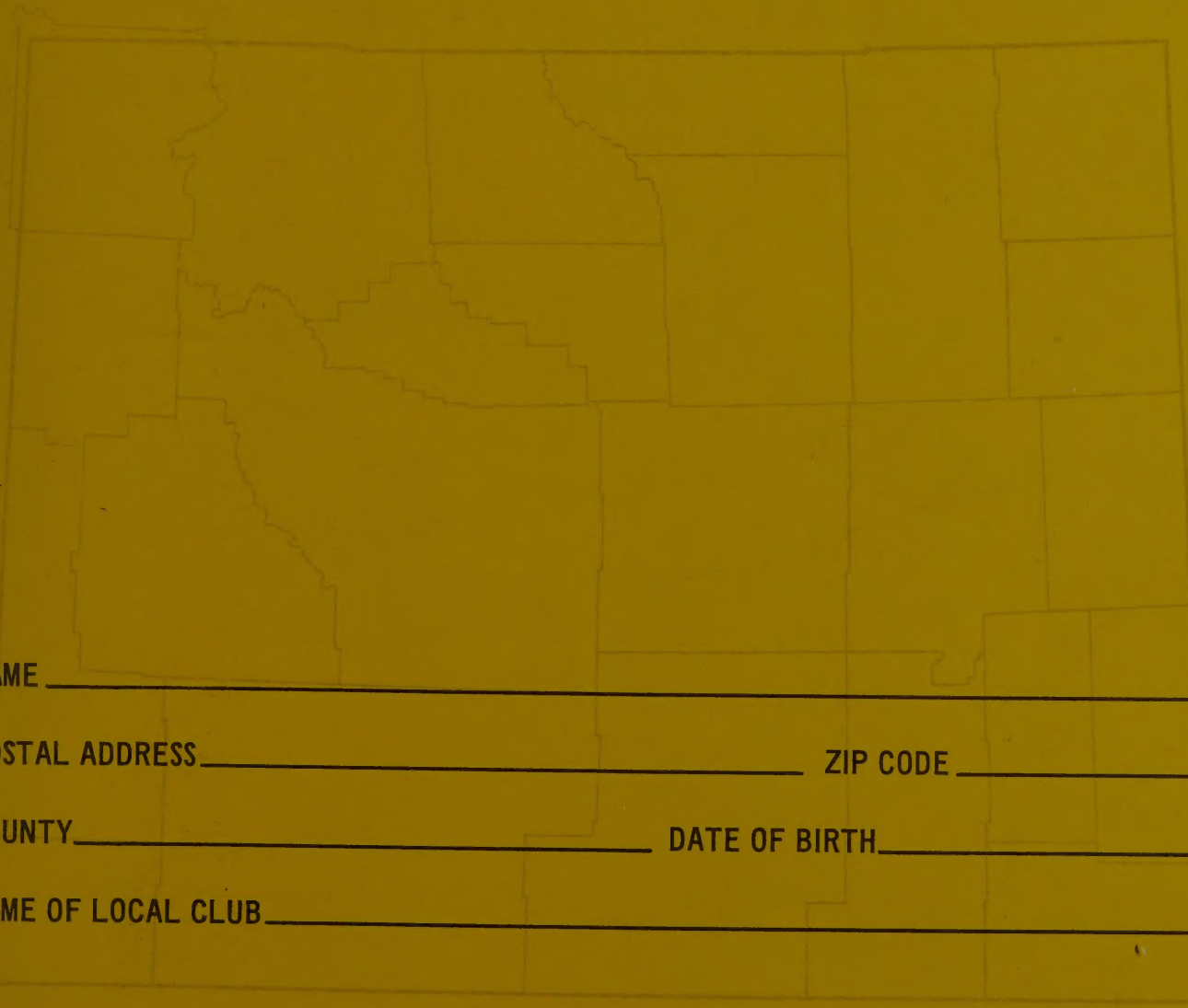

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